First Copy

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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Durant Offers New 5-Pas. 4-Door Sedan on 109 In. W.B. At New Low Price of $695

New Model Has Double Drop Frame, Six-Cylinder Engine, and Wide Array of Standard Equipment

LANSING, Mich., May 7.—A new addition to the Durant line, the model 619 4-door, 5-passenger, 6-window sedan built on 109-inch wheelbase, is announced by the Durant Motors, Inc. The appearance of the new model is distinctive of a new line and incorporates an entirely new radiator style.

A new double drop frame is used.

The new model is powered by a Continental 6-cylinder engine of the same dimensions and power output as that used in the models 612 and 614. It has a rear axle gear ratio of 3.9 to 1. The springs are shorter on the new model due to the decreased length of wheel base. The price is $695 with the four wood wheels and spare rim, which are standard equipment; five wire wheel are optional at extra cost. Deliveries will start June 1.

The engine is a six cylinder, L-head type with the cylinders cast in block with the upper crankcase; the cylinder head is detachable; the bore and stroke is 3¼x4 inches; piston displacement 199 cu. inches; taxable h.p. 25.4; brake horsepower 71 at 3,300 r.p.m.; compression ratio

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SEE 1,725,000 UNIT OUTPUT IN FIRST HALF

Estimate Based on Four Months Actual and Plant Schedules

NEW YORK, May 7.—An estimate based on the actual results for the first four months of the year, schedules for May and the outlook for June indicate that the production of motor vehicles in the United States and Canada in the first six months of 1931 will be between 1,725,000 and 1,750,000 units.

Close observers of the trend in the automotive industry seem, for the most part, to expect that May operations will just about approximate those of last month and that there will be only a slight decline in production in June from May.

The National Automobile Chamber of Commerce has estimated the April output at 348,908, while the Automotive Daily News has placed the April total at around 355,000. On the assumption that the official government figure will be around 350,000, a May output of close to that figure may be looked for, with June following with an output of something like 325,000 or 330,000.

One of the leading automotive

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USL HAS SALES GAIN OF 82.3% IN APRIL OVER MARCH

Niagara Falls, N. Y., May 7.—C. O. Miniger, chairman of the board, USL Battery Corporation, announced today that April sales in units show an increase of 82.3 per cent. over March and a 22.1 per cent. increase over the corresponding month of April, 1930.

Executives of the USL company attribute this increase in a large measure to the new merchandising policies recently effected. The re-

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MARCH SHIPMENTS OF CASINGS HITS NEW HIGH MARK

New York, May 7.—Shipments of pneumatic casings for the month of March amounted to 4,121,531 casings, the highest shipments for one month since September, 1930, according to statistics released by the Rubber Manufacturers Association today.

March shipments show an increase of 21.2 per cent. over February this year, the seasonal increase being 23.6 per cent.

This organization reports production of pneumatic casings for March to be 4,662,576 units, an increase of 17 per cent. over February this year, although 4.1 per cent. below March a year ago.

Pneumatic casings on hand March 31 amounted to 10,014,490 casings, an increase of 5 per cent. over the February figure of 9,535,650 casings, but 20 per cent. below March 31, 1930.

Late News Flashes

Detroit, May 7.—The industrial department of the Board of Commerce announces a slight increase in the city's employment index. On April 30 the index was 83.5 and March 31 it was 83. A year ago April 30 it was 110.5. The index is based on the monthly average for the years 1923-1925, inclusive, taken as 100, and is figured on the number of men on pay rolls of industrial concerns in the metropolitan area, including both part and full time workers.

* * *

Cleveland, May 7.—Employment during April dropped off slightly in Cleveland. The index figure is now 88.8, against 90.0 April 1 and compares with 107.4 at this time a year ago. The automotive industry showed an employment gain, but this was more than offset by decrease in the textile and clothing groups.

* * *

New York, May 7.—The Curtiss-Wright Airplane Company during the week ending May 2 sold 28 airplanes, according to Walter H. Beech, president. Eighteen of these were the Curtiss-Wright Junior, the two-place sport plane.

April Commercial Car Sales In Midwest Reflect Business Revival: Dealers Optimistic

NEW YORK, May 7.—Following the report of marked increase in actual new commercial car registrations in Illinois during April, Automotive Daily News today has received reports from Ohio and Nebraska indicating that the upturn in commercial car sales is being felt throughout the entire midwestern section as the result of a general business gain.

New commercial car sales in Illinois, as previously reported in Automotive Daily News, showed an increase of 18 per cent. in April, as compared with March of this year. The actual figures for the two months were: April, 1,775; March, 1,502. The April figure this year compared with 2,113 units in April, 1930, but a significant feature is the fact that the April figures this year were only 16 per cent. below the April, 1930, figures, whereas the March sales this year were 32 per cent. below the figures for the same month last year.

Field reports from Nebraska indicate that April commercial car sales in that section ran on a par with April last year and some dealerships report sales surpassing the 1930 April record.

Similar field reports from two cities in Ohio reflect the same upturn with dealers generally in a better frame of mind. Reports based on interviews with commercial car dealers in these sections are as follows:

LINCOLN, Neb., May 7.—**Truck sales, following their seasonal trend here, made notable advances in April over preceding months of the present year, equaling and even surpassing the record of April, 1930, for some dealers, although total truck sales for last month were probably 20 per cent. below the same month a year ago. The trend of sales beginning this month and for the last ten days of April was distinctly upward and encouraging, however, and indications are that May and June truck sales will be well up to the same period in 1930,**

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AUBURN ADDS 231 DISTRIBUTORS AND DEALERS IN APRIL

Auburn, Ind., May 7.—Keeping pace with its record-breaking shipments, Auburn Automobile Company added 231 new dealers and distributors in April, N. E. McDarby, vice-president in charge of sales, announced today.

McDarby also announced that since the New York Automobile Show early in January the company has added a total of 604 new dealers and distributors, bringing the company's representation up to the highest point in its history. This is a 263 per cent. increase in dealers over the same period last year. The company added 206 dealers and distributors in March, 124 in February, and forty-three in January.

DON HERR NAMED HEAD OF INDIANAPOLIS A. M. A.

Indianapolis, Ind., May 7.—Don Herr, head of the Don Herr Company, automobile rebuilding concern, has been elected president of the Indianapolis Automotive Maintenance Association. He succeeds Ralph Morgan and his term continues for one year.

Other officers elected include Charles Woliver, first vice-president; Joseph Wiles, second vice-president, and George Oburn, secretary-treasurer, all of whom are prominently identified with the motor servicing field here.

Willys-Overland Adds New 2-Door Coach at $595

TOLEDO, O., May 7.—Willys-Overland has extended its low-priced line of Willys Sixes to include a five-passenger coach at $595. This additional model is presented in two exterior color combinations.

In point of performance the new model is on a par with other Willys Six models. It has a top speed of

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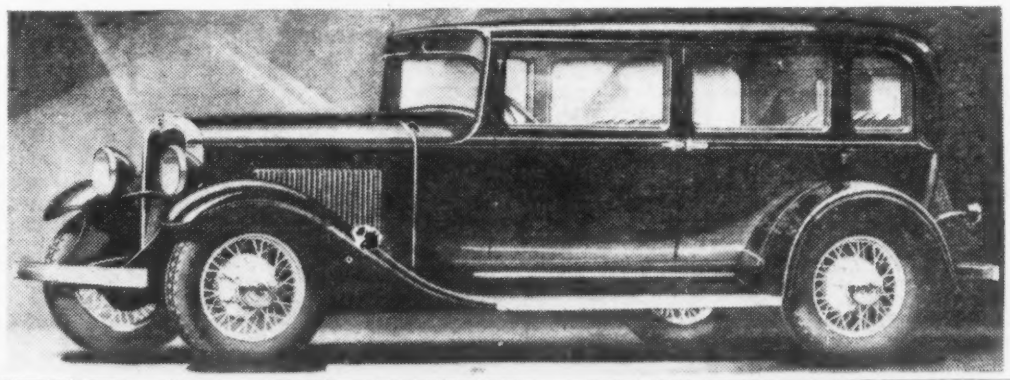
BUICK APRIL SALES 32% ABOVE MARCH

Flint, Mich., May 7.—Retail deliveries of Buick cars for the month of April reached a total of 13,108 units.

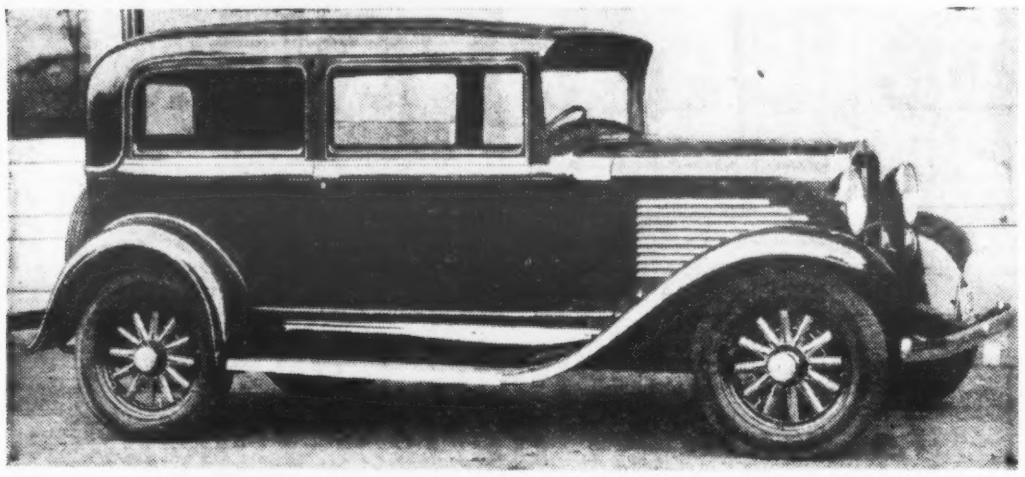
This was an increase of 32 per cent. over the preceding month, March retail deliveries having been 9,959.

New Durant Model 619 4-Door Sedan



Ringing Doorbells Makes Most Sales—See Page 12

New Willys Six Coach at $595



THE WILLYS SIX COACH at $595 has been added to the low-priced line of Willys Sixes by the Willys-Overland Company. This model is powered by the Pikes Peak motor. It is a two-door, five-passenger car having a top speed of more than seventy miles an hour and will do forty-five miles an hour in second. This coach, shown above, is on exhibition in show rooms of all Willys-Overland merchants

WILLYS-OVERLAND ADDS NEW 2-DOOR COACH AT $595

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better than seventy miles an hour and will do forty-five miles an hour in second, it is claimed.

This two-door model provides ample room for entrance and exit. This is made possible by the individual passenger's seat in front, which folds forward and the wide door space.

It is equipped with double acting, hydraulic shock eliminators, long springs on each side, soft cushions and form fitting seat backs.

Four-wheel, Duo-Servo, internal expanding brakes are standard. Non-shatterable safety glass is available in windshield and all windows at slightly extra cost. It is equipped with natural wood wheels, the spare being at the rear.

Willys-Overland dealers throughout the nation are now exhibiting the Willys Six coach.

AUBURN HOLDING SPECIAL SHOWING OF CONVERTIBLES

Auburn, Ind., May 7.—A special showing of Auburn convertible models is being made by dealers and distributors in various parts of the country.

Most of the dealers are displaying the cars in a way that shows the different advantages of the convertible type of automobile. Some of the tops are down with windows left raised, giving the prospective customer an idea of the wind and weather protection which these glasses afford; others have the windshield and door glasses lowered as well as the top, while cars are also displayed with the top up, making a completely closed automobile.

The Auburn convertible models, which are intended to give custom design at production car prices, have sprung into popularity almost overnight, with more than 30 per cent. of all Auburn cars sold in the first three months of 1931 of this type.

The convertible model differs from the closed model in that it can be converted into either an open or a closed car in a few minutes' time. Thus the advantages of both types are available to the owner with the purchase of only one car.

ALUMINUM INDUSTRIES OPENS CHICAGO BRANCH

Cincinnati, O., May 7.—Executives of the Aluminum Industries, Inc., of Cincinnati attended the opening of the new Chicago branch, 1923-25 South Wabash Ave., this week. The branch will serve the Middle West with the eight major lines for automotive manufacture and replacement, produced by the company in its plant at Cincinnati and the subsidiary plant at St. Cloud, Minn.

The new branch was opened under the name of, and will be operated by, the Warehousing Service Company.

FRANK W. GERMANE JOINS BUDD WHEEL

Philadelphia, May 7.—The Budd Wheel Company of this city and Detroit announces that Frank M. Germane has become associated with the company as special sales representative with headquarters in Detroit. Mr. Germane has been connected with the automobile industry since 1901. At one time he was special representative for the Timken Roller Bearing Company, and for the past five years he has been president of the Bearings Company of America in Lancaster, Pa.

The company also announced that Burton W. Brodt has rejoined its sales staff after an absence of several years. For the past four and one-half years Mr. Brodt has been sales manager of the Firestone Steel Products Company, located in Detroit and Akron, O.

USL HAS SALES GAIN OF 82.3% IN APRIL OVER MARCH

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vamped USL "Merchandising Plan for 1931" has been instrumental in aiding established dealers to increase their volume, and likewise has attracted many new dealers to the USL fold, officers say.

The USL company expects a steady increase in sales during May and June, with even greater stimulation in July and August, when the normal seasonal increase is registered. Further gains are also expected in September and October, when "peak" months of the battery industry arrive.

It is believed by USL officials that because of the present low stock of dealers any appreciable increase in consumer demand will be reflected quickly in additional factory sales.

CHICAGO CONDUCTING CAR INSPECTION DRIVE

Chicago, May 7.—A move to cut down automobile accidents due to defective mechanism has just started here through the installation of "safety lanes" in Chicago Heights. Other suburban communities will be included in the series of tests, which are sponsored by the Chicago Safety Council with the co-operation of automotive bodies and chambers of commerce.

The plan provides for cars to drive through the "safety lanes" where seven stops are made for inspections of registration plates, lights, horn, rear view mirror, steering wheel play, wheel alignment and brakes. Safety engineers make the tests without charge and give each driver an O. K. tag or a list of defects which should be corrected in the interests of accident prevention.

ESTIMATE 1,725,000 VEHICLE PRODUCTION IN FIRST 6 MONTHS

(Continued from Page 1)

statisticians of Wall Street has estimated May production at 340,000 and June at 330,000, with the qualification that some sudden move by the Ford Motor Company in the direction of either greater or reduced operations might cause a sharp revision of the estimate. His estimate is based on the expectation that the industry, with the exception of Ford, will do about the same in May as April, and will slow down somewhat in June, and that Ford will do the same.

On the basis of the N. A. C. C. estimate, production in April was only 25 per cent. below the corresponding month of last year, as against declines of 30 per cent. in March, 33 per cent. in February and 37 per cent. in January.

If it turns out that May and June account for 675,000 to 700,000 units, the falling off in these two months combined from the corresponding period of last year would be around 23 to 21 per cent.

Production for the first four months of this year on the basis of the N. A. C. C. estimate for April amounted to 1,046,399, as against 1,514,956 in the corresponding period of 1930, a decline of 31 per cent.

The output in the first half of last year amounted to 2,309,251. The production in the first half of this this year, allowing for 700,000 in May and June combined, would be 1,746,399, which would represent a decline from the corresponding period of 1930 of 24.5 per cent.

It is interesting to note that motor vehicle production in the first four months of this year was almost the same as the output for the first three months of last year. The 1,046,399 for the four months of this year, compared with 1,046,675 for the three-month period of last year. This, in turn, recalls the fact that the first four months' production in 1930 was nearly the same as the first quarter's total in 1929. The first four months of 1930 saw the production of 1,541,956 cars and trucks, as against 1,546,319 in the first three months of 1929.

April production, as estimated by the N. A. C. C., was 20 per cent. over March, a more than normal seasonal increase, and was the highest of any month since last June, and it is probable that the official figure will show that the April total was greater than the 349,596 for June of last year.

The following table shows comparative production in the first four months of the past three years:

	1931	1930	1929
January..	178.347	283,606	422,538
February.	229,810	345,955	497,705
March...	289,334	417,114	626,076
April.....	348,908	468,281	663,811
Totals..	1,046,399	1,514,956	2,210,530

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

SPARKS from DETROIT

Profits in Oils

* * *

Chrysler Engineers Install New Officers

* * *

John H. Kelly Is Back

* * *

One of Us!

* * *

Chris Sinsabaugh—Detroit Editor

AN oil man came into the columnar sanctum with the gossip that he had heard that one of the Detroit super-service stations had reached a peak of 310 oiling jobs in one day. Which caused the oil man to make a comparison between this high mark and what the average automobile dealer was satisfied with in this line, the remark being that if the automobile dealer got thirty greasing jobs in one day he would be well pleased.

"Service stations get this big play because their managements are service-minded, whereas the automobile dealer has been more eager to sell cars than he has been to develop service to his customers," was his explanation. "The automobile dealer, however, is beginning to realize the profits he is letting slip through his fingers by neglecting service, but as yet he hasn't struck his stride—his methods of going after it are still somewhat clumsy, compared with the service specialist."

* * *

THEN we gossiped along on this subject and the oil man dilated on the profits of good servicing, particularly where greasing and oiling are concerned. According to him the average greasing job for which $1 is charged costs only from 4 to 6 cents for material and from 30 to 35 cents for labor. But each average job means more than the 60 cents profit, for in most cases oil is sold. He figures that the average invoice runs in the neighborhood of $2.

* * *

INTERESTING also was his statement that one of the big car concerns had conducted a survey to determine how much service business each of its dealers might hope to get and discovered that 20 per cent. of the owners still are servicing their own cars in the way of oiling and minor jobs. This same survey, he stated, developed that not more than 1 per cent. of the owners called on ever had read the instruction books.

Quoting census statistics, he pointed out that the survey had developed the fact that Detroit, with 1,568,662 population at the time, had spent $154,956,396 for automobiles and their upkeep in 1929, an average of over $100 per capita.

* * *

WHILE we are in a statistical mood, let the column tell you how much the state collected in the first three months of this year on 1931 license tags. The secretary of state picked up $15,127,430 which Michigan motorists paid for the red and black enameled bits of tin. It sounds like a lot of money, but the sum does not equal that paid in the first quarter last year—$21,335,616. And the secretary thinks the year's total will be below that of 1930.

* * *

THE Chrysler Engineers' Club is an institution in this city of ours, well organized, well officered and an organization which has accomplished much. A new set of officers has just been installed, Howard E. Maynard taking the place of H. T. Woolson as president. A. G. Hereschoff is vice-president, succeeding George B. Allen; E. E. Orcutt is secretary, succeeding H. C. Kelly, and E. W. Upham, member at large, replaces G. W. Hubbard.

* * *

JOHN H. KELLY is back in the industry again, good news for those of us who remember his activities in other days before a long illness caused his temporary retirement. We knew him then as "Honest John," branch manager for the Republic tire in Chicago and one of the stalwarts who organized the Chicago Motor Club, now one of the largest in the world and occupying a million dollar clubhouse on Wacker Place. Youngstown claimed him and he went there as vice-president in charge of sales for Republic, holding that position until a merger came along. Then he was president of Hewitt Rubber in Buffalo for several years.

Now Kelly goes East to join the executive staff of the Thermoid Rubber Company of Trenton, N. J., devoting himself to the expansion of the mechanical rubber goods division.

* * *

FRED LEE, one-time star advertising salesman on leading motor publications and now hooked up with Harry Cooper, Chicago's big shot in the accessory field, convoyed

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Ford Accounts for 34.2% of First Four Months' Output

BUILDS MORE THAN THIRD OF CARS AND TRUCKS UP TO MAY 1

NEW YORK, May 7.—Production of the Ford Motor Company in the first four months of the current year accounted for 34.2 per cent. of the total turned out by the entire industry during that period.

Ford's output in the four months amounted to 357,217, as against 605,661 in the corresponding period of last year, a decline of 41 per cent.

In April Ford, by turning out 117,891 cars and trucks, accounted for 33.7 per cent. of the industry's total, as compared with 206,340, or 44 per cent. of the total, in the corresponding period of last year, a falling off from a year ago of 42.8 per cent.

Ford started this year with an output of 55,182, equivalent to 30.9 per cent. of the total for the industry. This compared with 98,529, or 34.8 per cent. of the total, in the first month of last year.

In February, Ford accounted for 37.1 per cent. of the total production by turning out 85,109 cars and trucks. This compared with 131,747, or 38 per cent. of the total, in the corresponding month of last year.

Ford's March production of 99,035 was equal to 34.3 per cent. of the total, and compared with 169,045, or 40.5 per cent. of the total, in the third month of 1930.

The 34.2 per cent. of the total accounted for by Ford in the first four months of this year compared with 40 per cent. in the corresponding period of last year.

The following tables show Ford's production for the four months' period of 1931 and 1930, with the percentage of the total indicated for each month:

1931	Production	Per cent. of Total
January	55,182	30.9
February	85,109	37.1
March	99,035	34.3
April	117,891	33.7
Totals	357,217	34.2
1930		
January	98,529	34.8
February	131,747	38.0
March	169,045	40.5
April	206,340	44.0
Totals	605,661	40.0

GRANT M'FAYDEN RECOVERS

Omaha, Neb., May 7.—Grant McFayden, president of McFayden Motor Company, Ford dealers, at 20th and Leavenworth Streets, has returned to Omaha from a year's residence in California, where he went on account of poor health. He reported on his return that he has entirely recuperated.

WICHITA CHEVROLET FIRM INCREASES STAFF

Wichita, Kan., May 7.—As an additional move for increased efficiency and service at the Yingling Chevrolet Company here several changes and an increased staff are announced by E. V. Yingling, owner and manager.

E. B. Salyers, in the automobile business more than a score of years, is the new business manager of the company. He came here from Hutchinson, Kan., where he was connected with the Gibson-Salyers Motor Company.

James Atkinson, formerly manager, has been placed in charge of the used car department. Mel H. Spaulding, formerly used car manager, is the new service department manager.

THOUSANDS SEE FORD PLANT IN OPERATION

Louisville, Ky., May 7.—The Ford Motor Company Louisville division has been conducting an open house week at the local plant, and has taken thousands of visitors through the plant, to show how Fords are produced on the assembly line. Thousands of school children have been shown over the plant. One bus brought fifty-four youngsters down from Salem, Ind.

Gov. Flem D. Sampson of Kentucky was a visitor at the plant.

Attendants conducted visitors through the plant by groups, giving them an opportunity to see Ford automobiles under process of assembly. White arrows, painted on the floor, pointed out the most advantageous routes to places of interest.

M. L. WAKEFIELD NAMED ABERDEEN FORD DEALER

Aberdeen, Wash., May 7.—M. L. Wakefield, since 1915 Ford dealer at Elma and Shelton, Wash., has been appointed Aberdeen Ford dealer. He has formed the M. L. Wakefield Motors, which has established headquarters at 301 East Market St., Aberdeen. Vern Huntington will be service superintendent and Arthur McKay will be sales manager.

GETS STATE CHARTER

Columbia, S. C., May 7.—Charter was granted by W. P. Blackwell, secretary of state, to Kershaw Chevrolet Company, Inc., Kershaw, to deal in automobiles, buy and sell parts, etc. Capital stock, $10,000. Officers: C. W. Burns, president and treasurer, and W. A. Shaw, Jr., secretary.

VANCOUVER FORD DEALER FINDS BUY BACK PLAN POPULAR

VANCOUVER MOTORS, LTD., 900 Seymour St., Vancouver, recently gained the confidence of all the automobile buying public of Vancouver and sold a number of new cars as the result of its plan whereby a new or used car could be purchased from the company with the guarantee that it would be bought back at any time for cash should circumstances arise making it inconvenient for the owner to retain the vehicle.

C. Thomson, manager of Vancouver Motors, states that this pledge plan went over 100 per cent., and was successful in stimulating and reviving business during a period when used car sales were comparatively quiet as the result of a feeling of depression which was felt in certain sections of the country.

Enlarging on this viewpoint, Mr. Thomson stated that the plan was adopted at a time when the country as a whole was just recovering from the desperate straits in which it had found itself, following the collapse of the stock market, and the year of heavy depression which ensued. At this time is was the experience of practically all automobile dealers that many persons were recovering sufficiently from the depression to be able to purchase a new automobile, but owing to the general air of uncertanty which existed and the possibilities that at some time they might be out of employment through their employers curtailing their payrolls or cutting down their working hours, these people were not actually purchasing cars.

To combat this and stimulate sales the concern made a cast-iron guarantee which was advertised extensively.

STAR SALESMAN GETS SALES MANAGER BERTH

Indianapolis, Ind., May 7.—F. L. Elliott, who for the last four years has won membership in the Chevrolet 100-Car Club selling Chevrolet cars here, has been appointed sales manager of the West Side Chevrolet Company, a recently organized dealership.

ANNOUNCES NAME CHANGE

Tulsa, Okla., May 7 (UTPS).—The name of the Ford dealerships in Tulsa has been changed fro the Golderman-Cantrell Company., Inc., to the American Motors, Inc. C. J. Cantrell is the president and manager, and Arch C. Collins is vice-president and assistant manager of the new organization.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Stark County's Chevrolet Sales Gain for Fifth Month

CANTON, O., May 4.—**For the fifth consecutive month, retail sales of new Chevrolet passenger cars in April topped all other makes in Stark county, where Canton, Alliance and Masillon are outstanding trading centers.**

Chevrolet sales during the thirty day period were reported as 193, compared to 115 during March this year. The Chevrolet advantage remains about the same as last month, with sales organizations waging one of the most intensive sales campaigns on record in this area. Chevrolet sales since the first of the year total 439.

Chevrolet distributors in April sold seventy-eight more pasenger cars than during March. It was the most active month for new car sales in more than a year, registrations showing that all makes of cars were up in proportion.

Pontiac sales made a bigger gain in April than during any month in more than a year, a total of forty-three new units being sold during the thirty-day period. Essex was next, with twenty-three sales. Practically every make of car in this particular class showed a gain in sales of better than 50 per cent. during April.

There was also a marked improvement in higher-priced car sales during April. New Packard sales during this period totaled thirteen, the highest in many months.

Improvement in the employment situation and the easing of credit have been contributing factors in the return to normal car buying, dealers said. It was also learned that down payments on new cars are more substantial and fewer requests are being made for financing.

The used car situation has improved also, the greater percentage of the sales being cash. Chevrolet and Ford used cars are most in demand, with the larger and more expensive models going begging for buyers.

FORD DEALER SELLS 74 USED CARS IN 2 WEEKS

Omaha, Neb., May 7.—Sample-Hart Motor Company, Ford dealer at 18th and Burt Streets, moved seventy-four used cars in two weeks by staging a special sale on the company's used car lot, which is one of the finest in the Middle West. In addition to newspaper advertising and window displays, customers were allowed to purchase any used car in stock without a down payment and with convenient payments. Permanent employment and good credit were all that was required of each purchaser on the no-down-payment plan.

RINGGARD EXPANDS

Rochester, N. Y., May 7.—Ringgard Motors, Inc., Ford and Lincoln dealership, has opened enlarged quarters in the three-story brick building at 30-34 South Union St., doubling the size of its former establishment. The firm will continue to occupy the showrooms at 305 East Ave., providing a total floor space of 55,000 square feet.

NEW CHEVROLET FIRM

Timmonsville, S. C., May 7.—R. A. McCollum of Sumter has leased the large brick building on Main Street from Dr. John McSween, and this week opened it for a Chevrolet saleshouse. Mr. McCollum has to assist him H. V. Boyce of Sumter and J. L. Wade of Timmonsville.

27 DE VAUX SOLD FIRST 3 DAYS BY N. J. DISTRIBUTOR

Newark, N. J., May 7.—With twenty-seven actual sales in the first three days of its official debut coupled with a prospect list of several hundred is the record of the U. S. Motor Sales Company of this city, state distributor for De Vaux. It is estimated that more than 5,000 persons were attracted to the first day's showing throughout the state.

Despite inclement weather conditions, 2,500 persons in Newark and vicinity thronged the showrooms of the U. S. Motor Sales Company, at 493 Broad St., Saturday upon the occasion o fthe initial showing of the new De Vaux. This was an actual count made on regulation tabulating machines during the hours of 10 a. m. and 10 p. m.

J. H. Heckathorn, retail manager, and his sales staff, consisting of Messrs. Katz, Birnbaum, Snyder and Kierstead, were kept busy. At 1 o'clock Sunday morning it was estimated that there were 300 persons on the showroom floor.

M. Stadfeld, president of the company was busy accepting the congratulations of his many friends, both in and out of the industry, and many floral tributes were received during the day.

Marine Lewis, vaudeville star was one of the first De Vaux buyers in the state.

Local automobile editors, including those of the foreign languarg press, were guests of Mr. Heckathorn and were given a demonstration in the De Vaux on the Eagle Rock Hil in West Orange.

President Stadfeld announces his dealer organization as follows:

Yaman & Feinberg, Bayonne; Roxy Motor Co. Inc., Harrison; Royal Motors Corp., Jersey City; U. S. Motor Sales Co., West New York; Spreen's Motor Sales, Hackensack; McCrane Auto Company, Rutherford; Williams Auto Sales, Rahway; Peter Turpan, Dover; Fichter's Garage, Rockaway; McCrane Auto Company, Passaic; Detroit's Garage, Tompkinsville, S. I. and Detroit's Garage, New Dorp, S. I.

ATLANTA WINS DOUBLE FORD HONORS IN APRIL

Atlanta, Ga., May 7.—Atlanta enjoyed the unique distinction of being proclaimed the city in which Ford dealers sold more cars above their quotas for April than any other city in the entire world.

The outstanding feature was that two Ford dealers on the same street in this city won first and second honors, with the J. R. Duncan Motor Company, 1009 Marietta St., winning first honor in the world-wide April intensive sales campaign.

CUMULATIVE NEW PASSENGER CAR REGISTRATION STATISTICS, APRIL, 1931

Returns for today: Delaware, North Dakota

States	Auburn	Austin	Buick	Cadillac	Chevrolet	Chrysler	Cord	De Soto	De Vaux	Dodge	Durant	Essex	Ford	Franklin	Graham	Hudson	Hupmobile	La Salle	Lincoln
Delaware	4		39	5	207	23				6	11	17	236	4	1	9	5	7	1
Illinois	408	20	719	139	4611	440	33	242	7	608	38	366	5179	21	115	152	196	98	58
N. Dakota	6		42	2	571	23		7		32	3	7	464		8	4	3		1
Totals	418	20	800	146	5389	486	40	242	7	646	52	390	5879	25	124	165	204	105	60
Dela., '30	7		36	8	219	37	1	5		8	22	24	442	1		10	6	10	2
Ill., '30	95	*	881	102	4601	499	29	374	*	575	111	790	9164	95	273	243	275	140	83
N. D., '30	1		32		732	43		31		49	26	38	1019	1	15	9	2	3	
Totals, '30	103	*	949	110	5552	579	30	410	*	632	159	852	10625	97	288	262	283	153	85

States	Marmon	Nash	Oakland	Oldsmobile	Packard	Peerless	Pierce-Arrow	Plymouth	Pontiac	Reo	Studebaker	Stutz	Viking	Whippet	Willys	Willys-Knight	Miscellaneous	Totals
Delaware	1	13	4	22	10		1	6	40	1	3			2	9	3		690
Illinois	41	400	124	720	172	40	45	258	805	51	502	12		18	273	66	27	17,004
N. Dakota	3	19	3	25				25	55	2	27		1	10	57			1,400
Totals	45	432	131	767	182	40	46	289	900	54	532	12	1	30	339	69	27	19,094
Dela., '30	2	9	19	17	12		1	14	45		11			7	9	3		987
Ill., '30	105	448	191	574	209	69	37	412	860	102	444	14	37	137	270	90	86	22,415
N. D., '30	18	46	16	40				66	79	2	44	1		67	52	12	2	2,446
Totals, '30	125	503	226	631	221	69	38	492	984	104	499	15	37	211	331	105	88	25,848

*Not in production at that time.

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday and Monday by
AUTOMOTIVE DAILY NEWS PUBLISHING CORPORATION,
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Member A. B. C.

FRIDAY, MAY 8, 1931

ADVERTISING AND BUSINESS HEADQUARTERS

Harry A. Tarantous, Business Manager. J. Edward Schipper, Eastern Manager. George M. Slocum, Manager Detroit Bureau, 427-8 Fisher Building, Detroit, Mich., phone Empire 3500; Willard R. Cotton, Western Manager, 333 North Michigan Ave., Chicago, Ill., phone Central 5936; Metz B. Hayes, New England Manager, Little Building, Boston, Mass.; Blanchard, Nichols & Coleman, American National Bank Building, San Francisco, Cal.; Lincoln Building, Los Angeles, Cal.; 1037 Henry Building, Seattle, Wash. Address ALL advertising and business correspondence to 350 Hudson St., New York City.

EDITORIAL DEPARTMENT

350 Hudson St., New York, N. Y. Telephone CA nal 6-1000.
Alexander Jonnston, Editor. William C. Callahan, News Editor.
Detroit Bureau—Chris Sinsabaugh, Editor, 427-8 Fisher Building, Detroit, Mich., phone Empire 3500. Contributing Editor, John C. Wetmore. A. Benson Carleton, Technical Editor.

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The Easiest Way

IN Secretary Mellon's recent address before the foreign bankers assembled in Washington there were a number of points that will bear earnest study and sincere assimilation. When he told us that our purchasing power is dependent on the standard of living that has become traditional in this country, he gave us a hint that we must follow if we are to restore prosperity.

However, more than any other point scored by the secretary of the treasury, we liked his blunt reminder that: "The troubles all of us face can not be cured by any quick and easy method or at some one else's expense, and it is well to face that fact."

In the beginning of the present depression there was a considerable tendency on the part of horrified business men to sit back and try to talk prosperity back into being. Then came, as the months dragged along, a tendency to throw up the hands and say, "Well, there is nothing we can do. We'll just have to sit down, grit our teeth and wait for time to bring a revival."

If there ever was a time that called for positive action by American business it is right now. Instead of sitting back and waiting for the clouds to roll by it is up to every last one of us to dig in and try, by working harder, to overcome the inertia, the lack of desire to buy, the fear of spending, which the depression has brought.

In our own business there were a lot of dealers who decided to take a year off for golf "until business comes back." Last summer it was disheartening to make a round of visits on dealers, and manufacturers, too, because of the number of "away today" or "gone for the day" or the franker "playing golf this afternoon" that greeted the visitor.

That mood has largely passed. Almost every business man realizes that the return of prosperity is not going to be a sort of esoteric evolution, brought about by the urbane passage of time. We are in a receptive mood for Secretary Mellon's suggestion that "there is no quick and easy method" of curing our ills.

The quickest and easiest method of bringing back business is to put the house in order and to put on the pressure in every department. Go after new car sales with renewed vim. People are buying when they are properly sold. Take heed to the used car department. See that they are bought at proper prices and that they are sold within the proper time. Go after service as you never have gone after it before. Sell service, don't wait for it to drift in voluntarily. And be sure that the service department is able to give a perfect job at the proper price to the owner. The dealer who follows this line of operation can be sure that he is not chasing a non-existant "quick and easy" way back to normal prosperity.

April Production

IN the production figures for April there is room for satisfaction by the automotive industry. When Automotive Daily News made its canvass of manufacturers and estimated an output of 355,000 vehicle units for April, a number of experts told us that we were way over. As a matter of fact we were over less than 7,000 units, and this will probably be reduced when the final figures are given out by the Department of Commerce.

With the manufacturers cutting production so closely to actual demand, this April output, which, according to the N. A. C. C. estimate, was 348,908, is definitely encouraging. It indicates that the public is beginning to lose its fear of spending. When a product is under consideration that the individual actually wants, he is willing to draw on his savings or buy from his income.

While restoration of normal prosperity may take a considerable time, there is not much doubt now that we have started on the long pull. All we need is a unanimous getting back on the job with every ounce of energy that we have.

COMMERCIAL CREDIT NET IS $1,767,660

Baltimore, May 7.—Consolidated report of Commercial Credit Company and subsidiaries for the first quarter ended March 31, 1931, shows net operating income of $1,767,660 available for interest and discount charges of $889,211. This compares with $2,831,940 available for interest and discount charges of $1,604,872 for 1930. Consolidated net income available for dividends, after reserves for Federal taxes, was $865,752 for the first quarter of 1931, as compared with $1,087,398 for 1930.

After providing for minority interest and dividends on all issues of preferred and preference stocks, including those of subsidiaries, consolidated net income on the average common stock outstanding was 63½ cents per share for the first quarter of 1931, the greater portion of which was earned during the month of March when all dividend requirements were covered by a substantial margin. This compares with 50 cents per share for the first quarter of 1930.

OPEN $2,000,0000 BRIDGE OVER DELAWARE RIVER

Bristol, N. J., May 7.—Bristol and Burlington have been formally joined by a new $2,000,000 bridge across the Delaware River. Dignitaries from both states attended the colorful ceremonies in the center of the bridge span. The bridge, on which toll will be collected, is entirely of steel and concrete. It has a center movable span 540 feet long between the two center piers. This can be raised to a height of 135 feet to permit the passage of boats. This vertical lift is the largest in the world. The span supplants the ferryboat which plied between the two towns for many years.

MAINE AND N. H. GOODYEAR DEALERS HOLD SESSION

Portland, Me., May 7.—More than sixty dealers of the Goodyear Tire and Rubber Company in Maine and New Hampshire gathered at the Eastland Hotel to attend a merchandising meeting. A luncheon opened the meeting at which M. R. Spransy of Boston, branch manager for the company, presided. Guests were W. A. Hazlett of Akron, O., Eastern division manager, and F. W. Lohman, also of Akron, representing the vice-president's office.

INVESTMENT GROUP BUYS BLOCK OF STUTZ STOCK

New York, May 7.—E. S. Gorrell, president of the Stutz Motor Car Company, announced yesterday that L. L. Harr & Co., investment bankers, had purchased a block of over $1,000,000 of the company's common stock. This should indicate between 40,000 and 50,000 shares at the current market price of around $24.50.

ROBERT LEE OF NASH HEART DISEASE VICTIM

Kenosha, Wis., May 7.—Robert Lee, division superintendent of the Nash Motors Company since 1916, died suddenly last night of heart disease. He was 54 years old and widely known in the automobile industry. He was responsible for many automotive ideas incorporated in the Nash car.

COMING EVENTS

MAY

4-9—**Charlotte, N. C.** Good Roads Convention.
4-9—**Washington, D. C.** International Chamber of Commerce, convention.
7-8—**Milwaukee, Wis.** Production meeting Society Automotive Engineers.
9-Aug. 9—**Berlin, Germany.** International Garage Exposition.
13-14—**Tulsa, Okla.** American Petroleum Institute, first mid-year meeting, Mayo Hotel.
15-16—**Detroit, Mich.** Society of Automotive Engineers, nineteenth aeronautical meeting, Book-Cadillac.
27-29—**New York City.** National Foreign trade Council.

JUNE

8-12—**Chicago, Ill.** Radio Manufacturers' Annual Show.
15-18—**Madison, Wis.** American Society of Mechanical Engineers, Oil and Gas Power meeting.
14-19—**White Sulphur Springs, W. Va.** Annual summer meeting, Society of Automotive Engineers.
22-26—**Chicago, Ill.** American Society for Testing Materials, annual meeting

SEPTEMBER

26-Oct. 2—**Atlantic City, N. J.** Annual meeting, American Electric Railway Association.

NOVEMBER

10-12—**Chicago, Ill.** Annual meeting, American Petroleum Institute, Hotel Stevens.

Contemporary Comment

WITH the crowding of highways by motor vehicles in the near future, it seems timely to call attention to an improper practice which is more or less condoned during slack traffic times, namely, the habit which drivers for some tradesmen have of parking on the wrong side of the street for convenience's sake while a delivery is made.

Apparently this applies to all forms of business, and unless a delivery clerk or a tradesman is well instructed on the subject he is naturally apt to take the most convenient places for the delivery of his merchandise and stop his car there whether or not it is on the right side of the street.

In years past there have been many complaints made to the Connecticut Department of Motor Vehicles on this subject. Some have related to milk delivery cars and wagons and it is an ordinary occurrence every spring for one or more such wagons to be struck by motor vehicles and the milk spilled. Sometimes more damage than that is done.

Rural free delivery men are rather apt to move from one side of the road to the other, either when they travel in cars or where, in some remote districts, a horse is still used. This traveling across the street is naturally occasioned by the fact that the delivery boxes are on both sides of the highways.

The law of the road is made for everybody and the safety of the public at large depends upon perfect observance of it. The more breaches of the rules there are which bring about actions unexpected by others, the more chances there are for misunderstanding and creation of difficulties.

It seems fair at this time when traffic is regaining volume to call attention to the necessity for playing the game according to the rules. Every one should remember that the right hand side of the road is the safe side on which to park a vehicle, even for a moment. If this rule is universally obeyed—in the city, in the country and at all times and places—a large number of serious accidents will be avoided.—**Robbins B. Stoeckel, Connecticut Motor Vehicle Commissioner, in U. S. Daily.**

SPARKS *from* DETROIT

(Continued from page 2)

to Detroit the other day George L. Moore, head of the Lubricator Corporation, Pure Oil Building, Chicago.

Summoned to a conference, this writer was given a peek at a clever little gadget which Moore is putting out which accomplished automatic chassis lubrication in a simple and yet uncanny way. It looks like a grease cup. Any oil or grease may be used and the jigger operates through high pressure and force feed. Each bump on the road releases the oil or grease and the chassis really lubricates itself. It is said to give 10,000 miles on one filling and is recommended for water pump, steering spindle, shackle bolts, clutch yoke, brake rod supports, brake cam bushings, torque rods and fan bearings.

* * *

"UNFORTUNATELY we have had what seems to me an unnecessary share of that type of leadership which either evades the facts or befogs them with such wishful thinking as makes them seem anything but what they are.

"It was 'wishful' thinking, with its 'new era prosperity' doctrines, which took us up too high and brought us down too low in 1928-29. It is wishful thinking which has inflicted upon us various political and economic nostrums which disregard one of the oldest and most obvious of all elementary economic facts, that you cannot circumvent the law of supply and demand by artificial price-fixing, especially when you control neither the supply nor the demand."

We like those phrases, "sunshine talk" and "wishful thinking." They sound original and they hit the bull's-eye.

* * *

BALLYHOOING the next Detroit Section, S. A. E., meeting next Monday, when Fred Duesenberg will be one of the speakers, Jimmy Schermerhorn tells us in the Super-Charger that "Duesenberg is not an Indiana politician; his movements therefore are not dependent upon a warden's pleasure nor a governor's pardon. He comes to us gladly, of his own free will. For two bucks you can see him, hear him and have dinner with him."

* * *

EVEN though he is Detroit manager of the Capper farm papers, John Gaughen, new president of the Aderaft Club, seems one of us, so closely does he follow automobile matters. We see him everywhere there is a motor gathering and he sure does talk our language.

S. S. HOLMES HONORED

Newark, N. J., May 6.—Stanley S. Holmes, vice-president of Western Electric Company and manager of the Kearny plant of that company, was elected president of the Newark Chamber of Commerce at the organization meeting of its board of directors held in the new quarters of the Down Town Club.

DAILEY SELLS INTEREST

Jamestown, N. Y., May 7.—H. A. Dailey has sold his interests in the H. A. Dailey Company, Inc., automotive accessories and supplies, with headquarters at 114 East 3d St., to Harry Elroff, who plans to continue the business, adding a number of new lines.

WEEKLY BUSINESS INDICATORS

SURVEY OF CURRENT BUSINESS

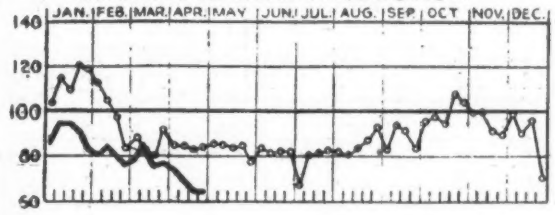
UNITED STATES DEPARTMENT OF COMMERCE

DATA PLOTTED, WHERE AVAILABLE FOR WEEK ENDING MAY 2, 1931

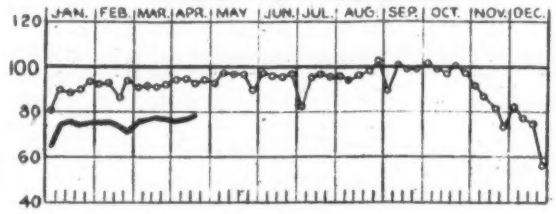
WEEKLY AVERAGE, 1923-1925, INCLUSIVE=100

LEGEND
1930
1931

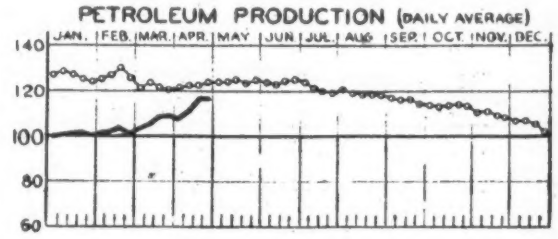
BITUMINOUS COAL PRODUCTION



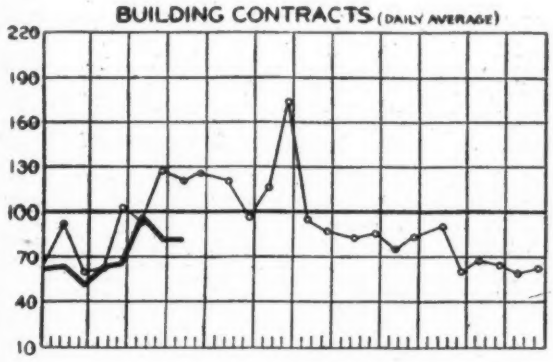
FREIGHT CAR LOADINGS



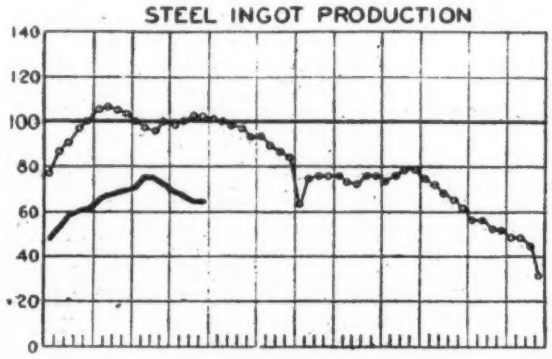
PETROLEUM PRODUCTION (DAILY AVERAGE)



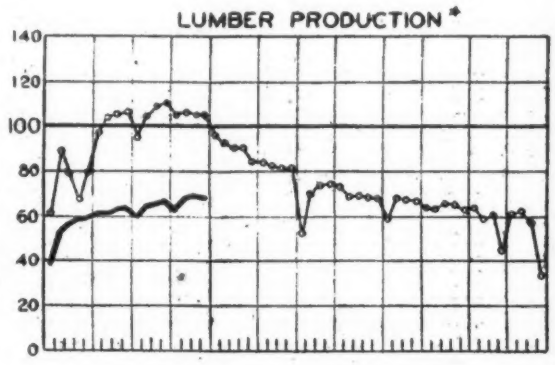
BUILDING CONTRACTS (DAILY AVERAGE)



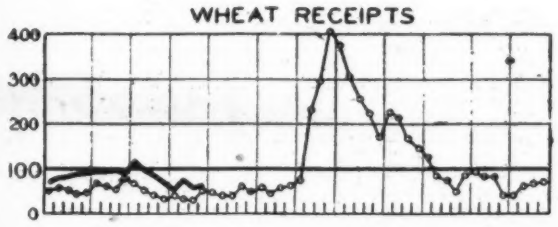
STEEL INGOT PRODUCTION



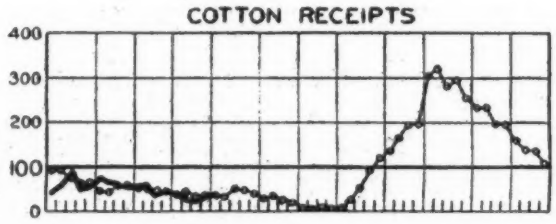
LUMBER PRODUCTION *



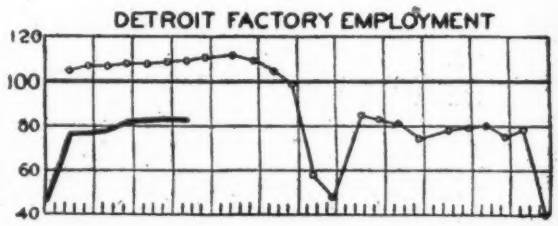
WHEAT RECEIPTS



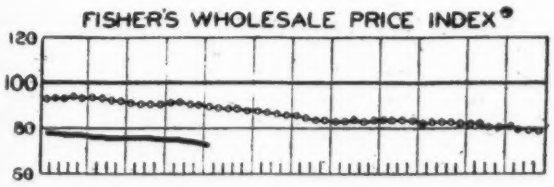
COTTON RECEIPTS



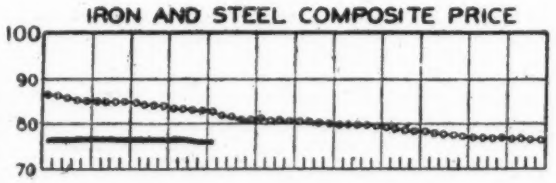
DETROIT FACTORY EMPLOYMENT



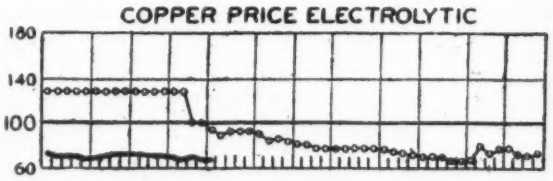
FISHER'S WHOLESALE PRICE INDEX*



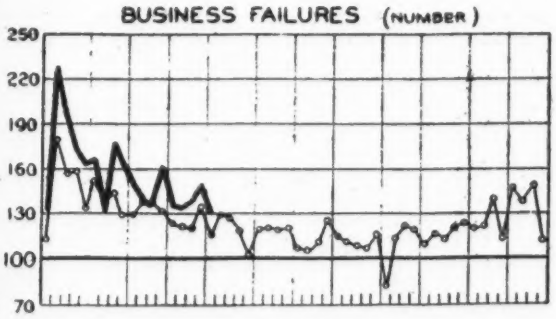
IRON AND STEEL COMPOSITE PRICE



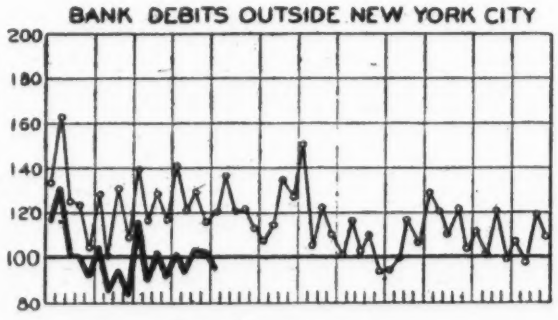
COPPER PRICE ELECTROLYTIC



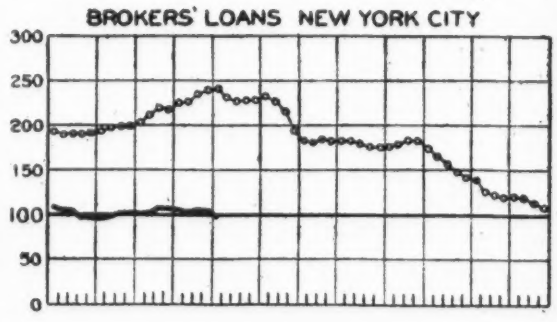
BUSINESS FAILURES (NUMBER)



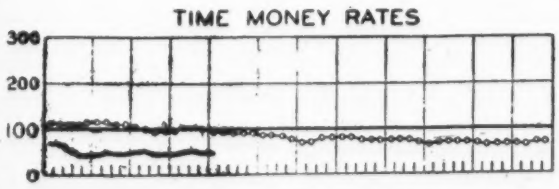
BANK DEBITS OUTSIDE NEW YORK CITY



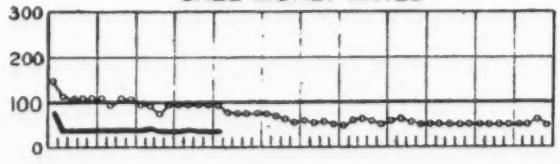
BROKERS' LOANS NEW YORK CITY



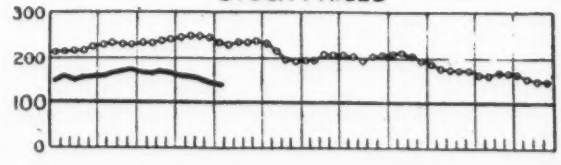
TIME MONEY RATES



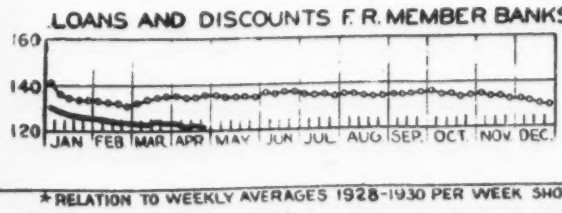
CALL MONEY RATES



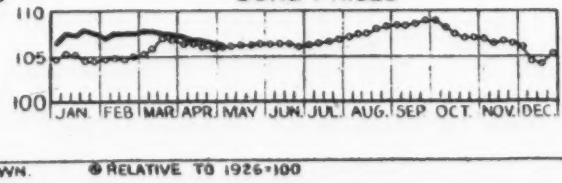
STOCK PRICES



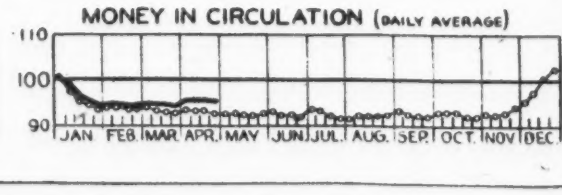
LOANS AND DISCOUNTS F. R. MEMBER BANKS



BOND PRICES



MONEY IN CIRCULATION (DAILY AVERAGE)



*RELATION TO WEEKLY AVERAGES 1928-1930 PER WEEK SHOWN. ⊕RELATIVE TO 1926=100

AMERICAN HAMMERED SETS NEW RECORD

Baltimore, May 7.—Allen Morton, president of the American Hammered Piston Ring Company of Baltimore, has announced that during April it was necessary to increase the working force and production 20 per cent. over January figures, setting an all-time sales and production record.

May production schedules call for a 20 per cent. increase over the April figures, the largest production schedule in all American Hammered history. This mammoth increase is certainly an indication that the replacement parts industry is forging steadily ahead.

With plans completed for another 20 per cent. increase in May, American Hammered is looking forward to a record-breaking June. Schedules are already being drawn up that will probably eclipse April and May, officials say.

NEW JERSEY JOBBER ADDS ANOTHER BRANCH

Trenton, N. J., May 7.—The Norwood Tire Company, Inc., of Long Branch, wholesale distributor of automotive equipment and replacement parts, has opened a branch at 438 South Broad St., this city. Samuel M. Clugston is in charge. In addition, this concern has branches in Atlantic City and Perth Amboy.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Production--Engineering--Factory

Electric Industrial Trucks In the Handling System Of Automotive Plants

By C. B. CROCKETT

Secretary Industrial Truck Association, New York City

The following, in part, is a paper presented before the spring production meeting of the Society of Automotive Engineers at Milwaukee, now in session at Milwaukee. It will appear serially in The Automotive Daily News:

It is safe to say that no other industry in the world has given the thought and study to the problem of materials handling given by the automotive industry; nor has any industry contributed more to the progress in this field. Materials handling is a bi-product of low-cost mass production methods, and it is in the smooth, fast movement of raw materials and semi-finished parts that this industry has achieved such outstanding success and realized such astounding economies.

It has even been said that in the planning of an automotive plant the actual production operations performed are secondary in importance to the problem of how the material will flow from one operation to the next. This is probably a mild exaggeration of the attitude of management of automotive plants toward materials handling, but the interest and study given by management to this problem has served only to accent the complications which exist and to drive home forcibly the fact that materials handling is not and cannot ever be an exact engineering science. This is due to the total lack of any common scientific terminology and because every problem is a combination of factors which, as a combination, are seldom, if ever, duplicated exactly in another plant.

The subject of this paper is the place of electric industrial trucks in the general handling system, and for this purpose we must make certain, more or less arbitrary, classifications of handling problems before a discussion of the requirements of these problems and the characteristics of the different classes of equipment which may meet these requirements. Actual examples are chosen in preference to generalization, as the lack of uniformity between various plants makes generalization meaningless and easily misinterpreted.

There are two general classifications of handling problems. First, there is the handling on the actual production line. Here a uniform material is moving constantly between two fixed points at a rate set by the speed of the production operations at the two ends of the movement. Although there is an opportunity under certain conditions for providing a cushion stock between operations, over a short period of time the rate of discharge of the first machine is equaled by the rate of consumption at the other end of the handling operation. We have, therefore, conditions which are ideal for conveyor equipment of all kinds; namely, a uniform flow of uniform material, in small units but large total quantity, moving always along the same fixed route.

There is, of course, no dividing line clearly defined between this type of handling operation and the second general class which is characterized by periodic movement of materials, not always uniform nor for the same destination. Let us take, for example, the movement of steel sheet from box cars to storage or start of process. Over a fairly long period of time the consumption of sheet is equal to the amount delivered, but the economic rate of unloading a car of a certain sized sheet will not be the rate at which that size is consumed. This may seem elemental to many, but it is the important characteristic which determines the choice of one or another general type of equipment. Further, a car of steel cannot always be spotted in the same position for unloading and the material may have to be delivered to any one of a number of machines or to storage. Sheet of widely varying size and different weights must be handled by the same equipment. We have therefore a material which is not uniform either as to size, weight, destination or rate of movement. It is a typical example of "periodic" movement, as differentiated from "continuous flow" movement.

With this differentiation in mind, let us examine the principal handling operations in any manufacturing plant. These operations may be roughly classified as follows:

1. Movement of raw materials from common carrier to storage or process.

2. Materials from storage to process.

3. Materials through process and assembly.

4. Finished product from production to storage or shipment.

5. Finished product from storage to shipment.

6. Supplies, machine parts, machines to and from point of use.

General operation 3 of moving materials or semi-finished parts through production and assembly will probably embrace many more separate handling operations than the combined totals of all the other listings, but these handlings may be grouped, as they are typical of "continuous flow" operations and, although of outstanding importance, they should not be considered to the exclusion of the handling of raw materials, finished product and other handlings of a periodic nature.

Conveyors of all types are without doubt the most economical mechanical equipment where the continuous flow of material is sufficient to warrant a comparatively high capital investment and where the chances of a change in the operation are not likely within the period required to pay off the investment. If the quantities moved are smaller than that required to economically install conveyor equipment a periodic method may be adopted for movement between operations.

The essential principle of periodic movement, for which the power truck is admirably suited, is the increase of size of the unit load moved and the elimination of individual handlings at the beginning and end of the operation. Overhead cranes and power trucks both satisfy these conditions, and the crane can handle larger and heavier loads than the truck and with a possible saving of floor area. Building construction

(Continued on Page 10)

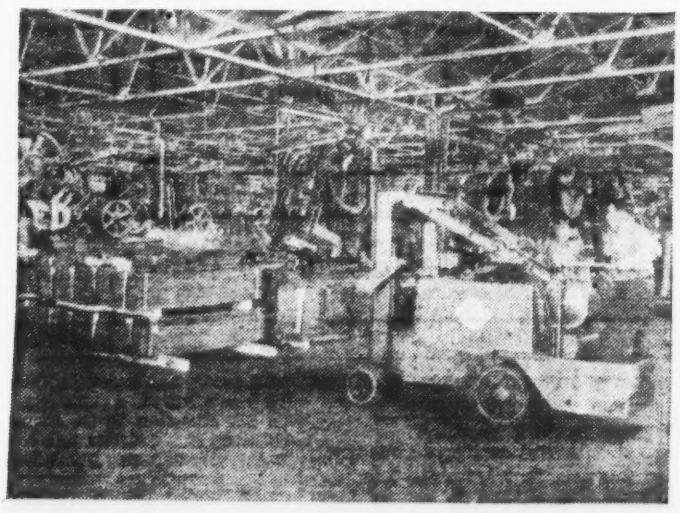
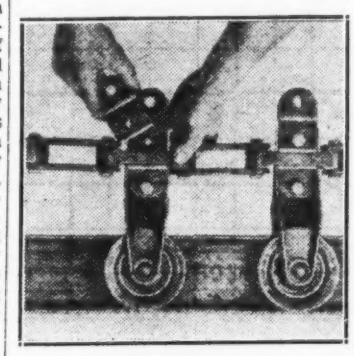


Fig. 1. Stacking of bundled sheet at start of stamping operation

CONVEYER TROLLEY EASILY ASSEMBLED



ATTACHING conveyer chain to Saginaw steel trolley

Saginaw Products Corporation, Saginaw, Mich., has introduced an improved conveyer trolley, in which the bracket assembly extends through the chain link as illustrated. The chain attachment lugs are bolted direct to the bracket tongue, which projects below the lower side of the chain.

In attaching the chain, it is only necessary to raise it so that the bracket tongue projects through the proper link and then bolt the attachment lugs in place. One bolt secures both lugs, and one man can perform the assembly.

NEW FIRESTONE PLANT STARTS PRODUCTION IN ARGENTINA

"The first Firestone tire was built and cured April 30, using standard methods and machinery throughout," according to a cable received today from John L. Cohill, vice-president and general manager of the new Firestone South American plant at Buenos Aires. The remarkable time the company has made since the ground was obtained by Harvey S. Firestone, Jr., president of Firestone de la Argentina, S. A., during his trip last September, was a revelation to industry in the Argentine.

The formal opening of the plant will take place in the near future, when the plant is in full operation, and plans nave been completed for ceremonies and inspection by officials of Firestone and the Argentine.

The new plant has a capacity of 1,000 tires and 1,000 tubes a day.

Congratulations were cabled to H. H. McGregor, chief engineer at the Argentine plant in charge of construction. Mr. McGregor went to the Argentine from Akron to handle the construction work. He was formerly chief engineer of Plant 2, Akron.

It is located at Llavallol, near Buenos Aires, on a main paved highway, and on the main line of the Southern Railroad, and is well located from a standpoint of labor supply, transportation, power and water supply.

The plant embodies all of the modern Firestone methods of straight line production. The American operating staff, consisting of engineers and production men from the Firestone Akron and California plants, left recently to train local working forces in tire building.

N. J. A.S.S.T. HEARS HARDER, INSTALLS ITS NEW OFFICERS

Newark, N. J., May 7.—Approximately $19,000,000 is spent annually in this country in research, Dr. O. E. Harder, assistant director of Battele Memorial Institute, Columbus, Ohio, told the New Jersey Chapter, American Society for Steel Treating.

Dr. Harder said 85 per cent. of this was spent by industries and 35,000 persons were engaged in research work. The work pays huge dividends, Dr. Harder said. In one industry a dividend of upward of $10 was received for each dollar expended.

Two hundred and fifty attended the meeting at the Newark Elks' Club and 192 the dinner before the business session, which included the installation of officers and entertainment.

Dr. Harder said the chemical industry had been developed from practically nothing to one of the country's greatest industries in about fifteen years because of research, and that about 2.4 per cent. of the total investment in the industry was being spent yearly on investigation. The metal industry is the second largest in research, spending 2.1 per cent. of the amount invested each year.

Even with the vast sums expended, Dr. Harder said, research was only in its infancy. He pointed out there were at least 1,000,000 possible combinations of metals of which only twenty-five or thirty had been developed.

John F. Wyzalek of the Hyatt Bearings division, General Motors Corporation, Harrison, was installed as chairman of the chapter and Alexander McWilliams of the McWilliams Forge and Steel Works, Jersey City, as vice-chairman, and John J. Johnson of the Firth-Sterling Steel Company, New York, and Richard W. Thorne of the Colonial Steel Company were reinducted as secretary and treasurer respectively. H. D. McKinney of the Driver Harris Company, Harrison, retiring chairman, was given a fountain pen set.

Edward W. Stearns, assistant chief engineer of the Port of New York Authority, gave an illustrated lecture on the George Washington Bridge and told of the future plans of the Port Authority.

Entertainment was furnished by the Harmony Girls, radio singers, humorists and other vaudeville entertainers. The committee in charge included Clayton Cronkright of Public Service, James Mudge of Western Electric and H. H. Hornbruch of the Weston Electrical Instrument Company. Gilbert Walters was master of ceremonies.

DIAMOND RUBBER INTRODUCES NEW PRODUCTS

Diamond Rubber Company, Inc., Akron, O., has recently introduced a new car-washing hose, rubber matting for safety insulation for operatives of power switchboards, new asbestos sheet packing, intended especially for use with hot oil, and a new belt dressing for rubber belts.

The hose combines plies of wrapped fabric and an outer seamless ply of forty-eight strong, twisted cords horizontally braided, with a newly developed rubber compound having both high resistance to heat and oil and an unusual toughness. This is a noteworthy feature, for rubber that will resist heat and oil usually has but little tensile strength. More than 1,300 pounds pressure is required to burst it, it is claimed.

The new matting, in ¼-inch thickness, is guaranteed to withstand 15,000 volts under the voltage test and 40,000 volts under the diaelectric test prescribed by the A. S. T. M., it is stated. It has six laminations of rubber and a ply of fabric.

The asbestos sheet packing requires a pdessure of 40,000 to 45,000 pounds to make it fail, and immersion tests in kerosene show it superior to the best packings previously developed for this service, it is claimed.

The belt dressing, in stick form, for rubber belts contains no oil or grease, no chemical harmful to belt or pulley and is not inflammable, the manufacturer states.

SPRAYIT ADDS NEW UNIT FOR SMALL JOBS

SPRAYIT, Model 77

Electric Sprayit Company, South Bend, Ind., has announced its new model 77 spray paint outfit for smaller jobs of spray painting. The equipment consists of a small rotary compressor built integral with the motor housing. It is driven by a universal motor, which operates on a. c. or d. c. current on 25 to 30 cycles.

SPRING PRODUCTION MEETING OF S.A.E. CLOSES TODAY

Milwaukee, May 7.—The spring production meeting of the Society of Automotive Engineers, sponsored by the Milwaukee Section, closes tomorrow. The morning technical session includes a paper, "New Developments in Surface Hardening of Steel and Their Effect on Cost of Production," by H. E. Koch, Hevi-Duty Electric Company. This will be followed by a demonstration at the plant of the Hevi-Duty Electric Company.

In the afternoon a paper, "Latest Developments in High Speed Milling with Tantalum and Tungsten Carbide Cutters," by F. W. Curtis, Kearney & Trecker Corporation. This will be followed by a demonstration at the Kearney & Trecker plant.

The sessions will close with a dinner at the Hotel Schroeder, at which H. L. Horning will be toastmaster. Dr. E. A. Ross will address members at the dinner on the subject, "Aspects of Economical Production as They Affect Present Conditions."

BOLT CUTTING TOOL HAS REPLACEABLE CUTTERS

FORGED steel bolt cutter

Forged Steel Products Company, Newport, Penn., is manufacturing a special bolt cutter, made of electric furnace high carbon alloy tool steel, for the use of repair shops and service stations. It is 14 inches long and provides cutting capacity for bolts up to ⅞ inch. Cutters are replaceable by means of set screws.

BAENDER ADDRESSES NORTHWESTERN S. A. E. ON CARBURETION

Seattle, Wash., May 7.—The May meeting of the Northwest section, Society of Automotive Engineers is to take place tonight at the New Washington Hotel, in this city.

"Scientific Carburetor Adjustment" is the subject to be discussed, with Prof. Fred G. Baender, head of the mechanical engineering department of the Oregon State College, the speaker.

This paper will be a sequel to his recent lecture on "Flame." Results of election of officers will also be announced.

The Key to Lower Delivery Costs

This report on costs in parcel delivery is the result of a survey conducted by the General Motors Truck Company, Pontiac, Mich. Automotive Daily News is pleased to present this entire report in serial form. Complete text of this report in pamphlet form is available at all General Motors Truck Company's dealers and distributorships.

THE problem of handling packages, from the moment the purchase is made until the package is on the truck for delivery, has many angles, especially in large stores. But essentially it involves two simple, important phases, no matter whether the store is large or small:

1. Wrapping the package securely and providing accurate, complete delivery instructions.

2. Timing the assembly of packages to provide prompt delivery.

Every parcel delivery executive has given each of these phases of his inside delivery considerable thought and attention. But the survey showed conclusively that not all executives look at these problems carefully and thoughtfully from the standpoint of their effect on the major cost of the whole delivery operation—the truck cost.

It is all very well, for example, to attempt to lower wrapping costs by simpler wrapping procedure, with less wrapping material on certain types of packages. It may be all very well to attempt to speed up sheetwriters or stubbers. But if these attempts delay delivery by causing more non-deliveries, more errors in addresses or delivery instructions, or the need for slower handling on the truck, the chances are the attempted savings on inside delivery will be more than eaten up by losses in outside delivery.

And indeed, during the survey, many instances were found in which inside handling of packages, although efficient and comparatively economical in itself, defeated the whole purpose of economy in delivery because it increased the cost of outside operation.

Several common types of such situations, which were uncovered during the survey preceding this report, are listed herewith. It will pay every parcel delivery executive to study these instances carefully and then check his own delivery operations to see whether or not he is sacrificing truck efficiency in attempting to gain low cost of package handling inside the store.

Since truck costs are the greatest single factor in total delivery costs, they should be considered first, when any major changes are being planned, in either outside or inside delivery.

(TO BE CONTINUED)

INSIDE VERSUS OUTSIDE COSTS

One typical store modified its inside delivery operation to eliminate one sheet-writer. Here is the result:

Monthly saving from eliminating one sheet-writer.....$88.50

Non-deliveries through errors increased on an average of 13 a day.

Average truck delay on non-deliveries was 6 minutes, or an increase of 78 minutes a day. Cost.....$.93 a day

Average waste mileage on non-deliveries was .9 mile, or an increase of 11.7 miles a day. Cost.....$2.22 a day

Approximate increase in cost per month of outside delivery $78.75

Considering the increase in non-deliveries and returns, did a net saving of $9.75 a month pay?

HOW INSIDE DELIVERY AFFECTS OUTSIDE COSTS

IN scores of stores, limited space for wrapping, sorting, and other inside delivery operations slowed up the work and delayed whole fleets of trucks for a total of many hours each month. Store space is valuable, but limiting package room space frequently increases outside delivery costs by hundreds and thousands of dollars in lost time. The tendency to limit loading space for the sake of economy oftentimes brings the same result. It will pay any store, whose space is limited, to time its trucks while waiting to load and figure closely the total time lost each year.

WITH a great many smaller stores, operating only a few trucks, there was almost no systematic management of trucks. Deliveries were not scheduled, costly special deliveries were frequent, delays in delivery were common, and the trucks were poorly cared for. Employing or designating one person to control schedules, assembly of packages, routes, and so on, is frequently a profitable move.

IN some stores, a bonus of 5 and 10 cents was offered for each "wrong address" which the driver delivered. This step was taken to reduce costs of inside handling of non-deliveries. But it was later found that drivers frequently spent as long as fifteen to twenty minutes locating addresses, while trucks stood idle or ran up excess mileage, and other deliveries were delayed.

IN several stores, desire to avoid costly alterations—of belt and conveyor systems, of building plan, of heating system, or of other features of the delivery room—has kept the store from providing the fastest possible arrangement of package bins and other handling equipment. Frequently the cost of such alterations would be quickly paid for by reduced loss of time for trucks in loading.

AGAIN and again, drivers are delayed sometimes as long as twenty minutes, when returning from a route, before they can start loading for the second delivery. In most cases, these delays are caused by the necessity of waiting in line to check in C. O. D.'s, returns, and non-deliveries. Such delays are costly, and they can easily be remedied by providing extra personnel at the check-in desk during rush periods.

IN a great many stores, the methods used in assigning C. O. D.'s to drivers, while they may be safe methods, cause many costly hours of truck delay. When the driver must go to a separate package room and stand in line to receive his C. O. D. sheet, for example, the lost time is costly. Executives should attempt as far as possible to combine safe handling with speed in dispatching trucks.

FREQUENTLY trucks are delayed because packages are not ready for loading when drivers are ready to load. For the most part, this is due to one of two reasons: (1) the delivery room is closed at night before all items on hand are wrapped, addressed, and ready for delivery; and (2) the deadline for afternoon delivery is set too close to the hour when trucks return from morning deliveries.

STILL another problem, which primarily affects the cost of outside delivery, is that of determining whether or not the store should install remote delivery stations. It is a problem only in large stores with deliveries concentrated in outlying districts. One store, for example, saved thirty-four hours and 161 miles of running time daily, on a forty truck fleet, by establishing a remote delivery station. The estimated annual saving was $7,200 on the whole delivery operation.

Every minute of truck delay is costly. Plan your inside operations to speed up outside delivery.

MACK TRUCK REPORTS QUARTER LOSS $178,737

New York, May 7.—The Mack Truck Company reports a net loss of $178,737 after charges and allowances for Federal taxes, for the quarter ended March 31. This compares with a net profit of $490,709 for the corresponding period in 1930, equal, after charges, to 64 cents per share on the 763,320 shares of common stock outstanding.

The statement issued by the company says: "Operations during the first quarter continued at a very low rate in January and February, but showed a somewhat increased volume in March, with a resultant operating profit for that month. General selling and factory expenses were materially reduced during the quarter to conform with the lower rate of operations. The company has cash on hand of approximately $5,000,000, with no bank loans outstanding.

MOVES TO NEW TERMINAL

Buffalo, N. Y., May 7.—The Eastern Greyhound Lines has established a modern motor coach terminal at 640 Main St., and has removed from present quarters at the Union Coach Ternimal. The new terminal will be used as a Buffalo headquarters by the Eastern Greyhound Lines, the Pennsylvania Greyhound Lines, the Penn Niagara Lines, the Gray Coach Lines and the Hamilton Bus Lines.

SEEKS BUS FRANCHISE

Williamsport, Pa., May 7.—Application for a franchise to operate a motor bus line between Williamsport, Pa., and Atlantic City, N. J., has been filed with the Public Service Commission by the recently organized Big Four Interstate Bus Line. The proposed route would be via Muncy, Sunbury, Mt. Carmel, Pottsville and Philadelphia, over the William Penn Highway. Martin Godzinsky and Serge Novack of Frackville, Pa., are the principals of the new company.

TARBELL RE-ELECTED CINCINNATI A. D. A. HEAD

Cincinnati, O., May 7.—J. W. Tarbell (Packard) was re-elected president of the Cincinnati Automobile Dealers' Association for the sixth successive year at the annual meting this week. George L. Ten Eyck (Chevrolet) was named vice-president; Charles F. Schiear (Chevrolet and Oldsmobile) was re-elected treasurer and Harry T. Gardner, for ten years secretary-manager of the association, unanimously was reappointed.

The meeting was held at the Hyde Park Country Club and luncheon was followed by the election of directors and the annual golf tournament.

Four new directors were elected, including H. J. Berning (Ford); C. F. Schiear (Chevrolet and Oldsmobile); George L. Ten Eyck (Chevrolet) and E. A. Cruse (Franklin). Results of the election of directors, who will serve two years, were announced at the annual dinner, after which the evening was spent in dancing and various amusements offered by the club.

OLDS BOOSTS OUTPUT TO 375 UNITS DAILY

Lansing, Mich., May 7.—Production schedule at the factories of the Olds Motor Works, General Motors unit here, is now 375 cars daily, factory officials said. The 375 mark represents a slight increase over the output during the last two weeks.

ORDERS 13 NEW BUSES

Winston-Salem, N. C., May 7.—Camel City Coach Company of this city, operator of bus lines in the Southeast, has placed an order with the Yellow Coach and Truck Company, Pontiac, for thirteen Model 29 passenger buses, to be used on its main lines, it was announced by John L. Gilmer, president. The purchase represents an investment of approximately $180,000.

FALLS RUBBER CO. TO ANNOUNCE NEW TIRE

Akron, O., May 7.—The Falls Rubber Company here will celebrate its 22d birthday on May 9 with an announcement of a new Falls Master Co' '. The company began operation in a small tile factory on the banks of the Cuyahoga River, which runs through the center of Cuyahoga Falls, a suburb of Akron. The present factory occupies 200,000 feet of floor space fully equipped with the most modern machinery. The products o fthe company include a de luxe line of tires and tube: of unusual design. A European plant is being completed in England for the manufacture of Falls Products for export.

The Falls Company markets its products through distributors exclusively. This company is a subsidiary to the Master Tire and Rubber Corporation. Other companies operated by the Master include the Cooper Tire and Rubber Company and the Giant Tire and Rubber C.] any, both of Findlay, O. F. C. Millhoff is vice-president of the Master Corporation.

LANSING EMPLOYMENT SHOWS MARKED GAIN

Lansing, Mich., May 7.—With automotive factories furnishing the backbone of employment here, the number of industrial workers in Lansing showed an appreciable gain last week, according to figures released by the Chamber of Commerce. In the eighteen leading manufacturing plants the employment was 9,779 persons, as compared with 9,572 for the previous week. Counting smaller manufacturers, industrial employment here was 10,868.

The Olds Motor Works, the Reo Motor Car Company, Fisher Body Corporation, Durant Motor Company of Michigan and the Motor Wheel Corporation constitute the major employing concerns in the group surveyed by the Chamber of Commerce.

22 YEARS

OF FITTING THE TRUCK TO THE JOB—NOT THE JOB TO THE TRUCK

For this long period of years BROCKWAY - INDIANA TRUCKS Have been keyed to the carefully analyzed needs of every truck-using industry.

That this principle of building motor trucks to fit the job is receiving wide endorsement is shown by the rapidly increasing fleets of Brockway-Indianas among the largest fleet operators in the leading industries.

BROCKWAY-INDIANA TRUCKS

BROCKWAY MOTOR TRUCK CORP.,
Cortland - - - - New York

A notable record for sturdy efficiency, for lack of trouble, in every type of commercial service. . . .

WISCONSIN AXLES

WISCONSIN AXLE CO.
Oshkosh Wisconsin

Cumulative New Commercial Car Registration Statistics, April, 1931

Returns for today: NORTH DAKOTA

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Essex	FWD	Fargo	Federal	Ford	G. M. C.	International	Mack	Paige	Relay	Reo	Republic	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Illinois	2	10	513	33	77			1	16	816	23	121	10			7	1		8	3	32		1	19	4	78	1775	Illinois
Nor. Dak.			87		14					92	1	46				7		1			2	1		3			254	Nor. Dak.
Totals	2	10	600	33	91			1	16	908	24	167	10			14	1	1	8	3	34	1	1	22	4	78	2029	Totals
Ill., 1930	8	20	663	54	72	2		9	19	932	41	111	17	3	2	26	1	2	5	7		14	12	13	1	79	2113	Ill., 1930
N. D., '30			112	1	9			1		144	2	77	1	1		11		1						11	2		373	N. D., 1930
Totals	8	20	775	55	81	2		10	19	1076	43	188	18	4	2	37	1	3	5	7		14	12	24	3	79	2486	Totals

Major Specifications and Mechanical Details of 1931 Commercial Cars

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Weight	Standard Tire Sizes Front	Standard Tire Sizes Rear
*Am. La France Chief	2½	3650	Own	L	6	3¾x5	331.0	33.7	65@2100	G	G & O	Borg	Spic	Ross	Str	Vac	DR	Own	4	Tim	Wo	31.2	B4IM	—	156	6200	32x6	32x6D
*Am. La France Chieftain	3-4	5500	Own	L	6	4⅛x5½	411.0	40.8	75@1800	G	G & O	Borg	Spic	Ross	Zen	Vac	DR	Own	4	Tim	Wo	28.8	B4IM	—	175	7200	36x8S	36x8D
Am. La France Big Chief	6	6725	Own	—	6	4½x6	——	48.6	90@1200	—	—	—	—	—	Zen	Vac	DR	Own	4	Own	2 R	32.2	——	—	226	10600	40x8S	40x8SD
Austin	400	475	Own	L	4	2.2x3	45.6	7.8	13@3000	G	Hex	Rock	Spic	Own	Til	Gra	Aut	W-G	3	Sal	Sp	5.25	O4M	76.5	75	1210	3.75x18	3.75x16
Autocar A	1½-2	3200	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Br-L	4	Own	Sp	27.9	LO4ID	460	150	5060	34x7	34x7
Autocar D	2-2½	3500	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Br-L	4	Own	2 R	33.5	LO4ID	460	150	5300	34x7	34x7D
†Autocar SH	2½-3	4300	Own	L	6	4½x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	44.0	O2IM	328	114	6770	34x7	34x7D
Autocar SCH	2½-3	4300	Own	L	6	4½x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	44.0	O2IM	328	157	6860	34x7	34x7D
†Autocar M	3	4100	Own	L	4	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	48.6	O2IM	328	114	6770	34x7	34x7D
†Autocar MS	3½	4600	Own	L	6	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	54.3	O2IM	516	114	7900	40x8	40x8D
†Autocar SHS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	54.3	O2IM	516	114	7925	40x8	40x8D
Autocar SCHS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	54.3	O2IM	516	157	8180	40x8	40x8D
Autocar N	3-3½	4600	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	41.2	OL4IH	574	174	7900	36x8	36x8D
Autocar TEA	3-3½	5350	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2 R	101.1	LO4ID	602	192	8900	36x8	36x8D
Autocar TFA	3½-5	6100	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2 R	101.3	LO4ID	602	192	9380	36x9	36x9D
Autocar C	3½-5	5500	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	51.7	O2IM	516	172	9500	42x9	42x9D
Autocar F	7½	6800	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-L	7	Tim	Wo	94.0	LT4DV	674	173	11000	36x7S	40x8SD
*Autocar G	10	9000	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-L	7	Tim	Wo	100.0	T6IA	720	171	13090	36x8	36x8D
Autocar N A	22000	4600	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	—	—	Spic	——	Str	Vac	DR	—	4	Own	2 R	54.3	OL4IH	574	174	7990	36x8	36x8D
Autocar N B	22000	4700	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	—	—	Spic	——	Str	Vac	DR	—	4	Own	2 R	54.3	OL4IH	574	192	8160	36x8	36x8D
Autocar N C	22000	4850	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	—	—	Spic	——	Str	Vac	DR	—	4	Own	2 R	54.3	OL4IH	574	218	8320	36x8	36x8D
Autocar N D	22000	4950	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	—	—	Spic	——	Str	Vac	DR	—	4	Own	2 R	54.3	OL4IH	574	242	8480	36x8	36x8D
Brockway 60	*6000	995	Con	L	6	3¾x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	3	Col	Sp	19.8	B4IM	297	132	3200	30x5	30x5
Brockway 65	6500	1195	Con	L	6	3¾x4½	248.2	27.3	65@2700	C	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	4	Col	Sp	21.3	C4IM	244	137	3400	30x5	30x5
Brockway 75	7500	1290	Con	L	6	3¾x4½	248.2	27.3	65@2700	C	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	4	Col	Sp	25.6	C4IM	244	137	3450	32x6	32x6
Brockway 90	9000	1525	Con	L	6	3¾x4½	248.2	27.3	65@2700	C	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	4	Col	Sp	20.9	C4IM	292	149	4050	32x6	32x6
Brockway 120	12000	1990	Con	H	6	4 x4¼	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	31.3	L4IH	353	156	5200	32x6	32x6D
Brockway 140	14000	2495	Con	H	6	4 x4¼	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	35.3	L4IHV	356	156	5580	32x6	32x6D
Brockway 141	17000	2935	Con	H	6	4 x4¼	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	46.2	L4IHV	356	170	6200	32x6	32x6D
Brockway 170	17000	3160	Con	H	6	4¼x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	46.6	L4IHV	380	170	6980	32x6	32x6D
Brockway 175	17500	3660	Con	H	6	4¼x4¾	427.5	45.9	100@2400	C	G & O	—	Spic	Ross	Zen	P	Aut	—	5	Wis	2 R	45.3	L4IHV	380	170	7260	34x7	34x7D
Brockway 195	19500	3820	Con	H	6	4¼x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	49.5	L4IHV	471	170	7500	34x7	34x7D
Brockway 196	19000	4185	Con	H	6	4¼x4¾	380.9	40.8	89@2400	C	Long	Borg	Spic	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	78.6	T2IMV	471	168½	7625	34x7	34x7D
Brockway 220	22000	4560	Con	H	6	4¾x4¾	427.5	45.9	100@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	50.7	L4IHV	946	170	8200	36x8	36x8D
Brockway 250	25000	5950	Con	H	6	4¾x4¾	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Tim	Wo	83.7	LT4IVA	664	182	10000	40x8	40x8D
Brockway 290	30000	7250	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	95.0	T4IA	676	182	10750	38x7P	40x14S
*Brockway 640	40000	9700	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	90.9	T4IA	864	212	14000	38x7P	36x16S
Chevrolet	½	395	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	3	Own	Sp	13.6	O4IM	101	109	1880	19x4.75	19x4.75
Chevrolet	1½	590	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	O4IM	170	157	2890	30x5	30x5D
Chevrolet	1½	520	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	——	—	131	2580	30x5	32x4
Commerce Series S 11	1	1600	Bud	L	6	3¾x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Col	Sp	25.5	L4IH	297	142	3900	30x5P	30x5P
Commerce Series S 11	1½	1900	Bud	L	6	3¾x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4300	30x5P	30x5DP
Commerce Series 40	1½	2990	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4700	34x5P	34x5DP
Commerce Series S 11	2	2030	Bud	L	6	3¾x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4500	32x6P	32x6D
Commerce Series 40	2	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4900	32x6	36x6D
Commerce Series 40	2½	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	5100	36x6P	36x6D
Commerce Series 60	2½	4580	Bud	L	6	4¼x5¼	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7000	36x6P	36x6D
Commerce Series 60	3	4680	Bud	L	6	4¼x5¼	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7100	36x6P	38x7D
Commerce Series 80	3½	5250	Bud	L	6	4¼x5¼	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8200	36x6S	36x12S
Commerce Series 80	4	5330	Bud	L	6	4¼x5¼	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8400	36x6S	36x14S
Commerce Series 100	5	5830	Bud	L	6	4¼x5¼	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	95.0	——	—	175	9600	36x6S	40x14S
Day Elder 60	1	1095	Con	L	6	3¾x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	36.3	B4IM	241	135	3200	20x6.00B	20x6.50B
Day Elder 85	1½	1645	Con	L	6	3¾x4½	248.3	27.3	65@2700	C	Per	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	42.3	L4IH	229	135	3750	20x6.00B	20x6.50DB
Day Elder 110	2	2095	Con	L	6	3¾x4½	248.3	27.3	65@2700	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Sp	44.9	L4IH	306	156	4600	20x7.00B	20x7.00DB
Day Elder 130	2½	2695	Con	H	6	4 x4¼	311.0	38.4	73@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Sp	40.7	L4IH	354	150	6400	20x7.50B	20x7.50DB
Day Elder 160	3	3695	Con	H	6	4 x4½	339.3	38.4	82@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Wo	36.1	L4IH	398	156	6600	20x7.50B	20x9.00DB
Day Elder 200	4	4295	Con	H	6	4 x4½	339.3	38.4	82@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Wo	43.5	L4IHV	489	156	7400	20x9.00B	20x9.00B
Day Elder 240	5	5500	Con	H	6	4¾x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	4	Tim	Wo	50.8	L4IHV	520	162	9300	38x9P	38x9DP
*Day Elder 285	8	6000	Con	H	6	4¾x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	71.2	L6IHV	674	164	12000	20x8.25B	20x8.25DB
*Day Elder 345	10	7500	Con	H	6	4¾x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	79.9	T4rIA	490	164	12500	20x9.00B	20x9.00DB
*Day Elder 402	12	9000	Con	L	6	4¾x5¾	611.4	54.2	127@2300	G	Per	Br-L	Blo	Ross	Zen	P	DR	Br-L	7	Tim	Wo	84.6	T4rIA	490	164	14000	20x9.75B	20x9.75DB
Diamond T 216	1½	895	Her	L	6	3¾x4½	248.0	27.3	56@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	——	L4IH	252	135½	3130	20x6.50B	20x6.50B
Diamond T 291	1½	1475	Her	L	6	3½x4½	268.0	29.4	60@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cov	4	Cla	Sp	——	L4IH	279	156¼	4500	20x6.50B	20x6.50DB
Diamond T 303	2-2½	1745	Her	L	6	3¾x4½	298.0	33.7	67@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cov	4	Cla	Sp	——	L4IHV	350	159¾	5000	20x7.00B	20x7.00DB
Diamond T 351	2½-3	2250	Her	L	6	4 x4½	339.0	38.4	74@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	——	L4IHV	408	168	5600	20x7.50B	20x7.50DB
Diamond T 504	3	2675	Her	L	6	4 x4½	339.0	38.4	74@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Wis	2 R	——	L4IHV	408	176½	5400	20x8.25B	20x8.25DB
Diamond T 506	3	3000	Her	L	6	4¼x4½	383.0	43.3	85@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	408	184	5400	20x8.25B	20x8.25DB
Diamond T 603	3-4	3300	Her	L	6	4¾x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	499	169	7500	20x9.00B	20x9.00DB
Diamond T 606	3-4	3440	Her	L	6	4½x4¾	453.0	48.6	100@2300	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	499	187½	7500	20x9.00B	20x9.00DB
Diamond T 750	4-5	4800	Her	L	6	4¾x5¼	529.0	51.3	——	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	W4I	552	178	8300	22x9.75B	22x9.75DB
*Diamond T 801	4	4140	Her	L	6	4¾x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Own	Wo	——	L6IHV	571	189½	8300	36x8P	36x8DP
*Diamond T 1200	6	5400	Her	L	6	4½x4¾	463.1	48.6	100@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	T4IA	238	190	11000	34x7P	34x7DP
*Diamond T 1600	8	6220	Her	L	6	4¾x4¾	470.0	51.3	104@2400	G	G & O	Cov	Spic-Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	T4IA	238	190	11700	36x8P	36x8DP
*Diamond T 1601	8	7500	Wak	L	6	5 x5¾	677.4	60.0	127@2000	G	G & O	Br-L	Spic-Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	T4IA	238	194	12500	36x8P	36x8DP
Dodge Bros. UF 30	½	515	Own	L	6	3¼x4¼	196.0	21.0	48@2800	G	Fed	Borg	Own	W-G	Car	P	DR	Own	3	Own	Sp	14.2	L4IH	114	109	1925	19x5.00	19x5.00
Dodge Bros. F 30	½	495	Own	L	4	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Un	W-G	Car	P	DR	Own	3	Own	Sp	14.2	L4IH	114	109	1975	19x5.25	19x5.25
Dodge Bros. U 1	¾	435	Own	L	4	3⅜x4¾	196.0	21.0	45@2800	G	Fed	Borg	Spic	Han	Car	Vac	NE	Own	3	Own	Sp	21.6	L4IH	189	124	2260	20x5.50B	20x5.50B
Dodge Bros. DA 1	¾	795	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	Vac	NE	Own	4	Own	Sp	36.8	L4IH	189	124	2360	20x5.50	20x5.50
Dodge Bros.	1	795	Own	L	4	3⅜x4¼	196.0	21.0	45@2800	C	Fed	Borg	Spic	Han	Car	Vac	NE	Own	3	Own	Sp	36.1	L4IH	205	133	2590	20x6.00	32x6
Dodge Bros.	1	895	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	Vac	NE	Own	3	Own	Sp	33.4	L4IH	205	133	2690	20x6.00	32x6
Dodge Bros. UF 30	1½	595	Own	L	4	3⅜x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	L4IH	120	136	2581	20x6.00	32x6
Dodge Bros. UF 31	1½	870	Own	L	4	3⅜x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own		Own	Sp	32.1	L4IH	229	165	2757	20x6.00	32x6
Dodge Bros. F 31	1½	770	Own	L	6	3¼x4¼	211.5	23.4	66@3200	G	Fed	Borg	Cle	W-G	Car	P	DR	Own		Own	Sp	32.1	L4IH	229	165	2807	20x6.00	32x6
Dodge Bros. F 30	1½	695	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	L4IH	120	136	2631	20x6.00	32x6
Dodge Bros. F 35	1½	1425	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	G	Long	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	L4IH	311	140	3780	20x6.00	20x6.00D
Dodge Bros. F 36	1½	1485	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	G	Long	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	L4IH	311	165	3972	20x6.00	20x6.00D
*Dodge Bros. F 40	2	2085	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	L4IH	350	150	5173	20x6.50	20x6.50D
*Dodge Bros. F 41	2	2085	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	L4IH	350	165	5211	20x6.50	20x4.50D
Dodge Bros.	3	1845	Own	L	6	3⅜x4½	241	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	L4IH	382	135	4235	32x6	32x6D
Dodge Bros.	3	1895	Own	L	6	3⅜x4½	241	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	41.4	L4IH	382	165	4528	32x6	32x6D
Dodge Bros.	3	1945	Own	L	6	3⅜x4½	241	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.2	L4IH	382	185	4715	32x6	32x6D
Dodge Bros. F 60	3	2645	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	2 R	43.8	L4IH	416	146	5543	32x6	32x6D
*Dodge Bros. F 61	3	2575	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	L4IH	416	170	5789	32x6	32x6D
*Dodge Bros. F 62	3	2695	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	L4IH	416	195	5901	32x6	32x6D
Essex Com.	¾	445	Own	—	6	2¾x4½	——	18.2	——	—	—	—	—	——	Mar	Vac	Aut	Own	3	Own	Sp	17.8	——	—	110	1930	30x5	31x5.50
Federal D	1½	795	Con	L	4	3¾x4½	200.5	24.0	48@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	377	131	3225	20x6.00	32x6
Federal E 6	1½	895	Con	L	6	3¾x4	215.0	27.3	60@2600	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	34.6	L4IH	377	132	3275	20x6.00	32x6
Federal F 7	1¼	1525	Con	L	6	3¾x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Gem	Zen	P	DR	Own	4	Tim	Sp	29.2	L4IH	414	132	3765	30x5	30x5D
Federal A 6	2	1855	Con	L	6	3¾x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Cla	Sp	38.5	L4IH	450	151	4530	32x6	32x6D
Federal A 6 T	2½	2185	Con	L	6	3¾x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Sp	41.3	L4IHV	659	151	4950	32x6	32x6D
Federal A 6 T W	2½	2360	Con	L	6	3¾x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Wo	42.0	L4IHV	659	151	4950	32x6	32x6D
*Federal D S W	2½-3	1050	Con	L	4	3¾x4¼	200.5	24.0	48@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	3925	20x6.00	32x6
*Federal E 6 S W	2½-3	1150	Con	L	6	3¾x4	215.0	27.3	60@2600	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	145	3975	20x6.00	32x6
Federal T 10 B	2½-3	2740	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	44.5	L4IHV	659	165	6550	34x7	34x7D
Federal T 10 W	2½-3	2915	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Wo	44.0	L4IHV	659	165	6550	34x7	34x7D
Federal T 10 D R	2½-3	2915	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	2R	45.6	L4IHV	659	165	6950	34x7	34x7D
Federal U 6	3-3½	3860	Con	H	6	4 x4½	339.0	38.4	85@2200	C	Long	Borg	Pet	Ross	Str	P	DR	Br-L	7	Tim	Wo	64.6	L4IHV	767	165	7220	34x7	34x7D
Federal U 6 D R	3-3½	3800	Con	H	6	4 x4½	339.0	38.4	85@2200	C	Long	Borg	Pet	Ross	Str	P	DR	Br-L	7	Tim	2R	69.6	L4IHV	767	165	7220	34x7	34x7D
Federal 4 C 6 A	4-5	4735	Con	H	6	4¼x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	72.2	L4IHV	894	192	8330	36x8	36x8D
Federal 4 C 6 A D R	4-5	4735	Con	H	6	4¼x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	2R	80.6	L4IHV	894	192	8330	36x8	36x8D
Federal 4 C 6 A B	4-5	4960	Con	H	6	4¼x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	72.2	T4IA	921	192	8850	36x8	36x8D
Federal 4 C 6 A B D R	4-5	4950	Con	H	6	4¼x4¾	381.0	45.9	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	2R	80.6	T4IA	421	192	8850	36x8	36x8D
*Federal U 6 S W	6	6000	Con	H	6	4¼x4¾	380.9	40

Major Specifications and Mechanical Details of 1931 Commercial Cars

(CONTINUED FROM PAGE EIGHT)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Transmission Make	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Weight	Standard Tire Sizes Front	Rear
General Motors T-31	*14000	1845	Own	H	6	3 1/8x4 5/8	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Eat	Sp	35.5	B4IM	524	141	4575	32x6P	32x6DP
General Motors T-42	*15000	1845	Buick	H	6	3 1/8x4 5/8	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Eat	Sp	33.4	B4IM	524	141	4725	32x6P	32x6DP
General Motors T-44	*16000	2095	Buick	H	6	3 1/8x4 5/8	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Eat	2 R	40.9	B4IM	524	141	5005	34x7P	34x7DP
General Motors T-51	*19000	2565	Own	H	6	3 3/4x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Eat	Sp	40.6	B4IM	574	155	6100	34x7P	34x7DP
General Motors T-55	*19000	2690	Own	H	6	3 3/4x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Eat	2 R	50.8	B4IM	574	155	6150	34x7P	34x7DP
General Motors T-60	*22000	3035	Buick	H	6	3 3/4x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Tim	Wo	52.5	B4IM	793	154	6925	34x7P	34x7DP
General Motors T-61	*22000	3445	Own	H	6	3 3/4x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Mun	4	Tim	Wo	52.5	B4IMV	685	154	6925	20x9.00B	20x9.00DB
General Motors T-82	*24000	3795	Own	H	6	3 3/4x5	331.4	33.7	94@2500	G	Long	——	Pet	Sag	Str	P	DR	Mun	12	Tim	Wo	143.0	B4IMV	865	155	7500	20x9.00B	20x9.00DB
General Motors T-85	*26000	5600	Own	H	6	4 1/4x5 1/2	468.0	43.3	115@2200	G	Long	Own	Spic	Sag	Str	P	DR	Ful	4	Tim	2 R	53.3	B4IM	685	171	10350	20x9.75B	20x9.75DB
†General Motors T-90	*28000	5285	Own	H	6	3 3/4x5	331.4	33.7	94@2500	G	Long	Own	Pet	Sag	Str	P	DR	Mun	12	Tim	Wo	129.0	B1A	870	185	9400	20x7.50B	20x7.50DB
†General Motors T-95	*34000	7545	Own	H	6	4 1/4x5 1/2	468.0	43.3	115@2200	G	Long	——	Spic	Sag	Str	P	DR	Ful	4	Tim	Wo	53.3	B6IA	—	189	13250	34x7P	34x7DP
†General Motors T-96	*34000	7195	Own	H	6	4 1/4x5 1/2	468.0	43.3	115@2200	G	Long	——	Spic	Sag	Str	P	DR	Ful	4	Tim	2 R	51.1	B6IA	—	189	13250	34x7P	34x7DP
Gramm A X 4	1	795	Con	L	4	3 1/2x4	200.4	24.0	50@2800	C	Per	Jon	Bic	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	2900	20x6.00	20x6.50
Gramm A X 6	1	895	Con	L	6	3 1/2x4	214.7	27.3	61@3000	C	Per	Jon	Bic	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	2900	20x6.00	20x6.50
Gramm B X 4	1 1/2	895	Con	L	4	3 1/2x4 1/4	200.4	24.0	50@2800	C	Per	Jon	Bic	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3100	20x6.00	20x6.00D
Gramm B X 6	1 1/2	985	Con	L	6	3 1/2x4	214.7	27.3	61@3000	C	Per	Jon	Bic	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3100	20x6.00	20x6.00D
Gramm B	1 3/4	1495	Lyc	L	6	3 1/4x4 1/2	224.0	25.3	61@2800	G	Per	Own	Bic	Ross	Zen	Vac	Aut	Cov	4	Tim	Sp	34.3	L4IH	278	140	3800	20x6.50	20x6.50D
Gramm C	2	1795	Lyc	L	6	3 5/8x4 1/2	278.6	31.5	82@2600	G	Per	Own	Bic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	31.0	L4IH	353	160	4820	20x7.00	20x7.00D
†Gramm C X	2	1695	Con	L	4	4 1/8x4 1/4	227.0	27.2	55@2600	G	Per	Jon	Bic	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	3300	20x6.50	20x6.50D
Gramm C X	2	1295	Con	L	6	3 5/8x4 3/8	248.2	27.3	70@3000	C	Per	Jon	Bic	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	3300	20x6.50	20x6.50D
Gramm D	2 1/2	1895	Lyc	L	6	3 3/4x4 1/2	299.0	33.7	90@2200	G	Per	Jon	Bic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	33.0	L4IHV	339	160	5100	20x7.50	20x7.50D
Gramm E	3	2595	Lyc	L	6	3 7/8x5	353.8	36.0	90@2200	G	Per	Own	Bic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	35.0	L4IHV	659	160	5500	20x8.25	20x8.25D
Gramm E Y	3	3595	Con	H	6	4 1/8x4 3/4	380.8	40.8	90@2200	C	Per	Ful	Bic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	30.0	L4IHV	—	190	6750	20x7.50	20x7.50D
Gramm G Y	4	4345	Con	H	6	4 3/8x4 3/4	428.4	45.9	100@2200	C	Per	Ful	Bic	Ross	Zen	P	Aut	Cov	4	Wis	2 R	28.0	BW4IM	—	210	7200	20x8.25	20x8.25D
Gramm G W	4	5175	Con	H	6	4 3/8x4 3/4	428.4	45.9	100@2200	C	Per	Ful	Bic	Ross	Zen	P	Aut	Cov	4	Wis	2 R	—	4IA	864	157	8900	20x9.00	20x9.00D
Gramm H Y	5	6545	Con	L	6	4 3/4x5 3/4	611.4	54.1	127@2300	G	Per	Ful	Bic	Ross	Zen	P	Aut	Ful	4	Wis	2 R	35.2	4IA	—	236	9600	36x8	36x8D
Indiana 60	*6000	995	Con	L	6	3 1/8x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	3	Col	Sp	19.8	B4IM	297	132	3200	30x5	30x5
Indiana 64	6500	1195	Con	L	6	3 3/8x4 5/8	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	3	Col	Sp	21.3	C4IM	244	137	3400	30x5	30x5
Indiana 74	7500	1290	Con	L	6	3 3/8x4 5/8	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Col	Sp	25.6	C4IM	196	137	3450	32x6	32x6
Indiana 80	9000	1525	Con	L	6	3 3/8x4 5/8	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Col	Sp	20.9	C4IM	292	149	4050	32x6	32x6
Indiana 111 XW	12500	1850	Her	L	4	4 x5	251.3	25.6	46@2000	G	McC	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Wis	2 R	35.2	K2IM	270	120	3740	32x6	32x6D
Indiana 120	12000	1990	Con	H	6	4 x4 1/8	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	31.3	L4IH	353	156	5200	32x6	32x6D
Indiana 140	14000	2495	Con	H	6	4 x4 1/8	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	35.3	L4IHV	356	156	5500	32x6	32x6D
Indiana 141	17000	2935	Con	H	6	4 x4 1/8	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	46.2	L4IHV	380	170	6200	32x6	32x6D
Indiana 170	17000	3140	Con	H	6	4 1/8x4 3/4	380.9	40.8	85@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	46.6	L4IHV	380	170	6800	32x6	32x6D
Indiana 175	17500	3660	Con	H	6	4 3/8x4 3/4	427.5	45.9	100@2400	C	G & O	——	Spic	Ross	Str	P	Aut	—	5	Wis	2 R	45.3	L4IHV	380	170	7200	34x7	34x7D
Indiana 195	19500	3820	Con	H	6	4 1/8x4 3/4	380.9	40.8	85@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	49.5	L4IHV	471	170	7500	34x7	34x7D
Indiana 196	19000	4185	Con	H	6	4 1/8x4 3/4	380.9	40.8	85@2400	C	Long	Borg	Spic	Ross	Str	P	Aut	Br-L	7	Tim	Wo	78.6	T2IMV	500	168 1/2	7625	34x7	34x7D
Indiana 220	22000	4560	Con	H	6	4 3/8x4 3/4	427.5	45.9	100@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	50.7	L4IHV	546	170	8200	36x8	36x8D
Indiana 250	25000	5950	Con	H	6	4 3/8x4 3/4	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	63.7	LT4IHV	664	182	10000	40x8	40x8D
Indiana 290	30000	7250	Con	L	6	4 3/4x5 3/4	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	95.0	T4IA	676	182	10750	38x7P	40x14S
*Indiana 640	40000	9700	Con	L	6	4 3/4x5 3/4	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	90.9	T4IA	864	212	14000	38x7P	36x16S
International A W 1	3/4	650	Wak	L	4	3 1/2x4 1/2	173.0	19.6	30@2700	G	Mod	Rock	Mec	Ross	Zen	Vac	DR	Mec	3	Own	Sp	17.4	B4IM	212	136	2620	20x5.25	20x5.25
International Sp. Del.	3/4	675	Wak	L	4	3 1/2x4 1/2	173.0	19.6	30@2700	G	Long	Rock	Mec	Ross	Zen	Vac	DR	Mec	3	Eat	Sp	60.3	BE4IM	256	124	2200	30x5.25	30x5.25
International 6 Sp. Spec.	1	675	Wak	L	4	3 1/2x4 1/2	173.0	19.6	30@2700	G	Long	Rock	Mec	Ross	Zen	Vac	DR	Mec	3	Eat	Sp	52.6	BE4IM	292	124	2430	30x5	30x5
International S 24	1 1/4	1160	Lyc	L	4	3 3/4x5	220.9	22.5	43@2350	G	Long	Own	Mec	Col	Zen	Vac	DR	Own	3	Eat	Sp	21.3	B4IM	346	130	3200	30x5	30x5
International S 26	1 1/4	1310	Lyc	L	6	3 1/4x4 1/2	224.0	25.3	61@2800	G	Long	Own	Mec	Col	Zen	Vac	DR	Own	3	Eat	Sp	21.3	B4IM	346	130	3250	30x5	30x5
International A W 2	1 1/2	675	Wak	L	4	3 1/2x4 1/2	173.0	19.6	30@2700	G	Long	Rock	Mec	Ross	Zen	Vac	DR	Mec	3	Own	Sp	60.3	BE4IM	492	136	2980	20x5.50	20x6.00
International S F 34	1 1/2	1450	Lyc	L	4	3 3/4x5	221.0	22.5	43@2350	G	Long	Own	Mec	Col	Zen	Vac	DR	Own	3	Eat	Sp	22.6	BE4IM	346	140	3520	30x5	32x6
International A L 3	1 1/2	1450	Lyc	L	6	3 1/4x4 1/2	224.0	25.3	61@2800	G	Mod	Own	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	42.9	B4IM	295	138	4300	20x6.00	20x6.00D
International S F 36	1 1/2	1600	Lyc	L	6	3 1/4x4 1/2	224.0	25.3	61@2800	G	Long	Own	Mec	Col	Zen	Vac	DR	Own	3	Eat	Sp	22.6	BE4IM	346	140	3570	30x5	32x6
International A 2	1 1/2	675	Wak	L	4	3 5/8x4 1/2	186	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	BE4IM	212	136	2800	5.50x20	6.00x20
International B 2	1 1/2	675	Wak	L	4	3 5/8x4 1/2	186	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	Mec	3	Own	Sp	47.3	BE4IM	212	136	2830	5.50x20	6.00x20
International S D 44	2	1590	Lyc	L	4	3 3/4x5	221.5	22.5	43@2350	G	Long	Own	Mec	Col	Zen	Vac	AB	Own	4	Eat	Sp	40.6	BE4IM	421	117	3700	30x5	32x6
International S D 46	2	1740	Lyc	L	4	3 1/4x4 1/2	224.0	25.3	61@2800	G	Long	Own	Mec	Col	Zen	Vac	AB	Own	4	Eat	Sp	40.6	BE4IM	421	117	3750	30x5	32x6
International S F 46	2	1950	Lyc	L	6	3 1/4x4 1/2	224.0	25.3	61@2800	G	Long	Own	Mec	Col	Zen	Vac	DR	Own	4	Eat	Sp	40.6	BE4IM	421	140	4000	32x6	32x6D
International A 4	2	1860	Own	H	6	3 5/8x4 1/2	279.0	31.5	65@2800	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	47.8	BE4IM	278	145	5070	32x6	32x6D
International H S 54	2 1/2	3850	Hall	H	4	4 1/4x5 1/2	312.0	28.9	54@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Eat	2 R	60.5	BE4IM	726	148	8000	36x5S	36x6S
International H S 54 C	2 1/2	3850	Hall	H	4	4 1/4x5 1/2	312.0	28.9	54@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	Ch	63.8	BO4IM	732	148	8665	36x5S	36x10S
International W 1	2 1/2	3850	Hall	H	4	4 1/4x5 1/2	312.0	28.9	54@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2 R	60.5	BE4IM	710	148	8300	36x5S	36x8S
International A 5	3	2550	Own	H	6	3 5/8x4 1/2	279.0	31.5	65@2800	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	52.6	BE4IM	430	156	5606	34x7	34x7D
International A 6	3	2675	Own	H	6	3 5/8x4 1/2	279.0	31.5	65@2800	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	62.5	BE4IM	430	156	5750	34x7	34x7D
International H S 74	3 1/2	4850	Hall	H	4	4 3/4x5 1/2	390.0	36.1	60@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Eat	2 R	76.5	BE4IM	850	160	10700	36x5S	40x12S
International H S 74 C	3 1/2	4850	Hall	H	4	4 3/4x5 1/2	390.0	36.1	60@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	Ch	79.1	BO4IM	736	160	11000	36x6S	40x12S
International W 3	3 1/2	4850	Hall	H	4	4 3/4x5 1/2	390.0	36.1	60@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2 R	76.5	——	—	160	10125	36x6S	40x12S
International H S 104 C	5	5500	Hall	H	4	4 3/4x5 1/2	390.0	36.1	60@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	Ch	90.5	BO4IM	736	160	11095	36x6S	40x14S
La France Rep. A 1	6000	795	Lyc	L	6	3 x4 3/4	201.5	21.5	60@2500	G	G & O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	36.1	L4IH	—	132	3000	20x5.50	32x6
La France Rep. C 1	7500	1295	Lyc	L	6	3 1/4x4 1/2	224.0	25.4	61@2750	G	G & O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	29.1	L4IH	—	144	3300	20x6.00	32x6
La France Rep. D 1	9000	1595	Lyc	L	6	3 1/4x4 1/2	224.0	25.4	61@2750	G	G & O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	37.9	L4IH	—	144	3725	30x5	36x5D
La France Rep. F-3	13000	2395	Lyc	L	6	3 3/4x4 1/2	299.0	33.7	80@2500	G	Per	Ful	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	40.1	L4IHV	—	174	5520	34x7	34x7
La France Rep. H 2	16000	2985	Lyc	L	6	3 7/8x5	354.0	36.0	85@2360	G	Per	Ful	Spic	Han	Zen	Vac	Aut	Ful	4	Wis	2 R	41.6	L4IHV	—	174	6370	34x7	34x7D
La France Rep. M 2	20000	4000	Wak	L	6	4 3/8x5 1/8	462.0	46.0	97@2000	G	Per	Ful	Spic	Han	Zen	Vac	Aut	Ful	5	Wis	2 R	48.1	L4IHV	—	174	7500	36x8	36x8D
La France Rep. 35-2	24000	5600	Wak	L	6	4 1/2x5 3/4	549.0	48.6	98@1850	G	Own	Ful	Spic	Han	Zen	Vac	Aut	Ful	4	Wis	2 R	45.4	L4IHV	—	174	9250	38x9	38x9D
Maccar 36 A	1 1/2	1900	Bud	L	6	3 3/4x4 1/2	298.0	33.7	83@2800	G	Per	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Tim	Sp	31.1	L4W	315	171	4850	32x6	32x6D
Maccar 40 A	2	2400	Bud	L	6	3 3/4x4 1/2	298.0	33.7	83@2800	G	Per	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Tim	Sp	40.6	L4W	365	171	5340	32x6	32x6D
Maccar 56	3	3350	Bud	L	6	3 7/8x5	311.0	33.7	72@2100	G	Per	Br-L	Spic	Ross	Str	Vac	DR	Br-L	4	Wis	2R	34.5	L4W	380	183	6200	34x7	34x7D
Maccar 60	3	3950	Bud	L	6	4 1/8x5 1/8	411.0	40.8	103@2100	G	Per	Br-L	Spic	Ross	Str	Vac	DR	Br-L	5	Tim	Wo	37.2	L4W	377.5	183	6600	20x9.00	20x9.00D
Maccar 66 A	4	5500	Her	L	6	4 3/8x4 3/4	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	86.7	4 A	617.5	206	8200	20x9.75	20x9.75D
Maccar 86 A	5	5950	Her	L	6	4 3/8x4 3/4	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	85.0	4 A	623	206	9500	20x10.50	20x10.50D
Mack B L	1 1/2	2500	Own	L	6	3 1/4x5	248.9	25.3	63@2800	G	Own	Own	Spic	Gem	Str	Vac	NE	Own	4	Tim	Sp	Opt	L4IH	302	148	——	20x6.00B	20x6.00DB
††Mack B G	2	3000	Own	L	6	3 5/8x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Tim	Sp	Opt	O4IV	415	156	——	32x6	32x6D
Mack B F	2 1/2	3950	Own	L	6	3 5/8x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Vac	RB	Own	4	Own	Sp	Opt	O4IV	450	2-Opt	——	8.25x20B	8.25x20DB
Mack A B	2 1/2-3	4350	Own	L	4	4 1/4x5	283.7	28.9	60@2200	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2R	Opt	O4IV	471	2-Opt	——	34x7	34x7D
††Mack A B	2 1/2-3	4000	Own	L	4	4 1/4x5	283.7	28.9	60@2200	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	471	2-Opt	——	34x7	34x7D
Mack A B	2 1/2-3	4500	Own	L	6	3 5/8x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2R	Opt	O4IV	471	2-Opt	——	34x7	34x7D
††Mack A B	2 1/2-3	4150	Own	L	6	3 5/8x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	471	2-Opt	——	34x7	34x7D
††Mack B C	3-4	5250	Own	L	6	4 x5 1/2	417.7	38.4	100@2300	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	2R	Opt	O4IV	610	2-Opt	——	36x8	36x8D
††Mack B C	3 1/2-5	5500	Own	L	6	4 x5 1/2	417.7	38.4	100@2300	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	610	2-Opt	——	36x8	36x8D
††Mack B J	3 1/2-5	6150	Own	L	6	4 1/2x5 1/2	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	2R	Opt	O4IV	567	3-Opt	——	36x8	36x8D
††Mack B K	3 1/2-5	5150	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	O4IV	492	3-Opt	——	36x8S	36x5DS
††Mack A K	3 1/2-5	5250	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	2R	Opt	O4IV	492	3-Opt	——	36x5S	36x5DS
††Mack A C	3 1/2-5	4950	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	3-Opt	——	36x5S	40x5DS
††Mack A K	3 1/2-5	6450	Own	L	6	4 1/2x5 1/2	525.5	48.6	126@2200	G	Own	Own	Spic	Han	Str	Vac	L-N	Own	4	Own	2R	Opt	O4IV	492	3-Opt	——	22x10.50B	22x10.50DB
††Mack A C	5 1/2-7	5500	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	3-Opt	——	36x6S	40x8DS
††Mack A C	5 1/2-7	6550	Own	L	6	4 1/2x5 1/2	525.5	48.6	126@2200	G	Own	Own	Spic	Han	Str	Vac	L-N	Own	4	Own	Ch	Opt	O4IV	492	3-Opt	——	24x10.50B	24x10.50DB
††Mack A C	7 1/2	6000	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	3-Opt	——	36x7S	40x7DS
††Mack A P	7 1/2	9500	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O2IV	287	191	——	36x7S	40x8DS
Mack A K 6—6 wheel	——	9500	Own	L	6	4 1/2x5 1/2	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	Ch	Opt	ORIV	574	3-Opt	——	9.75x22B	9.75x22DB
††Mack A C 6 wheel	10	7500	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	ORIV	574	3-Opt	——	36x6S	40x12S
Mack A C 6—6 wheel	——	8700	Own	L	6	4 1/2x5 1/2	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	Ch	Opt	ORIV	574	3-Opt	——	9.75x22B	9.75x22DB
††Mack A P 6 wheel	10	12000	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	ORIV	574	3-Opt	——	36x7S	40x12S
Paige	1/2	*895	Own	L	6	3 1/4x4 1/2	224	23.4	70@3200	C	Long	Long	Un	Ross	DL	P	DR	—	3	——	Sp	14.2	4IH	187	115	——	18x5.50B	18x5.50B
Pierce-Arrow P T	2	2950	Own	L	6	3 3/4x4 1/2	298.0	33.5	70@2600	G	Long	Long	Cle	Han	Zen	P	DR	Cla	4	Tim	Sp	——	B4IMV	388	160	5600	20x7.50B	20x7.50B
Pierce-Arrow P W	3	4150	Own	L	6	4 1/4x4 1/2	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	*Wo	——	W4IA	488	150	6660	20x9.00B	20x9.00B
Pierce-Arrow P X	4	5375	Own	L	6	4 5/8x4 3/4	479.0	51.3	103@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	——	W4IA	610	160	9300	20x10.50B	20x10.50B
Pierce-Arrow P Y	5	5950	Own	L	6	4 5/8x4 3/4	479.0	51.3	103@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	Wo	——	W4IA	701	160	10675	24x10.50B	24x10.50B
Pierce-Arrow P Z	8	6950	Own	L	6	4 3/4x5 3/4	611.0	54.1	130@2000	G	Long	Long	Cle	Han	Zen	P	DR	Own	4	Own	*Wo	——	W4IA	702	168	12800	36x7B	40x16B
Relay Series 15 AA	3/4	1370	Con	L	6	3 3/8x4	214.7	27.3	52@2200	C	Long	Borg	Bic	Han	Str	Vac	Aut	W-G	4	Own	2R	38.4	L4IH	297	131	3750	30x5P	30x5P
Relay Series 15 AB	1	1400	Con	L	6	3 3/8x4	214.7	27.3	52@2200	C	Long	Borg	Bic	Han	Str	Vac	Aut	W-G	4	Own	2R	38.4	L4IH	297	131	3800	30x5P	30x5P
Relay Series S 11	1	1700	Bud	L	6	3 3/8x4 1/2	241.6	27.3	53@2200	G	Long	Br-L	Bic	Han	Zen	Vac	Aut	Br-L	4	Own	2R	25.6	L4IH	297	142	4050	30x5P	30x5P

Major Specifications and Mechanical Details of 1931 Commercial Cars

(CONTINUED FROM PAGE NINE)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Weight	Standard Tire Sizes Front	Rear
Selden 67 C	5	4975	Con	H	6	4⅜x4¾	427.0	45.9	100@2400	C	Own	Br-L	Spic	Ross	Str	Vac	Aut	Br-L	7	Wis	2R	——	L4IHVA	—	171	8700	36x8	36x8D
Selden 77	7	7365	Con	L	6	4¾x5¾	611.0	54.1	127@2300	G	Own	Br-L	Spic	Ross	Str	Vac	Aut	Br-L	7	Wis	2R	——	BW4IM	—	178	11600	40x8	42x9D
Service Series S 11	1	1600	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Col	Sp	25.5	——	—	142	3900	30x5P	30x5P
Service Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4300	30x5P	30x5DP
Service Series 40	1½	2990	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4700	34x5P	34x5DP
Service Series S 11	2	2030	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4500	32x6	32x6D
Service Series 40	2	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4900	36x6	36x6D
Service Series 40	2½	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	5100	36x6P	36x6D
Service Series 60	2½	4580	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7000	36x6	36x6D
Service Series 60	3	4680	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	——	— —	175	7100	36x6	38x7D
Service Series 80	3½	5250	Bud	L	6	4⅛x5⅛	411.0	40.8	83@2100	G	Long	Borg	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	— —	175	8200	36x6S	36x12S
Service Series 80	4	5330	Bud	L	6	4⅛x5⅛	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	— —	175	8400	36x6S	36x14S
Service Series 100	5	5830	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	95.0	——	— —	175	9600	36x6S	40x14S
Stewart 30	1	695	Lyc	L	4	3¾x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	— —	130	2977	20x6.50	20x6.50
Stewart 30X	1	795	Lyc	L	6	3 x4¾	185.0	19.8	55@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	— —	130	3018	20x6.50	20x6.50
Stewart 40	1½	895	Lyc	L	4	3¾x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35.1	B4IM	— —	130	3350	20x6.50	20x6.50D
Stewart 40 X	1½	995	Lyc	L	6	3 x4½	201.5	23.8	60@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35.1	B4IM	— —	130	3393	20x6.50	20x6.50D
Stewart 34 X	1½	1195	Lyc	L	6	3¼x4½	224.0	25.3	61@2600	G	Own	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35.1	B4IM	— —	145	3710	20x6.50	20x6.50D
Stewart 28X	2	1495	Lyc	L	6	3¼x4½	224.0	25.3	61@2600	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	— —	136	4058	20x6.50	20x6.50D
Stewart 29 X S	2	1695	Lyc	L	6	3⅝x4½	278.0	25.3	85@2750	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	— —	145	4960	32x6	32x6D
*Stewart 18 X	2½	2690	Lyc	L	6	3⅝x5	310.0	31.5	85@2750	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Tim	Wo	48.1	B4IM	— —	165	5901	32x6	32x6D
Stewart 32 X	2½	1990	Lyc	L	6	3⅝x4½	278.0	31.5	80@2500	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	— —	165	5230	32x6	32x6D
Stewart 35 X	3	2590	Lyc	L	6	3¾x4½	299.0	33.8	85@2750	G	Fed	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	— —	165	5880	20x8.25B	20x8.25D
Stewart 36 X	3	2990	Lyc	L	6	3⅞x5	354.0	36.2	90@2750	G	Fed	—	Spic	Ross	Str	P	DR	Br-L	4	Tim	Wo	105.1	——	— —	165	6500	20x8.25	20x8.25D
Stewart 38-8	3½	3990	Lyc	L	8	3¾x4¾	462.0	44.4	130@2800	G	Fed	—	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	105.1	——	— —	170	7600	20x9.00	20x9.00D
Stewart 38-6	3½	3990	Wak	L	6	4⅜x5½	420.0	45.9	100@2000	G	Fed	—	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	105.1	——	— —	170	7600	20x9.00	20x9.00D
Stewart 19 X	3½	3690	Lyc	L	6	3⅞x5	354.0	36.2	90@2750	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	12	Tim	Wo	105.1	B4IM	— —	165	7110	34x7	34x7D
Stewart 31 X	5	4990	Wak	L	6	4⅜x5⅛	462.0	45.9	100@2000	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	8	Tim	Wo	105.1	B4IMV	— —	165	9340	36x6S	36x6SD
Stewart 27 X	7	5700	Wak	L	6	4⅜x5⅛	462.0	45.9	100@2000	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	8	Tim	Wo	105.1	B4IMV	— —	165	9987	36x7	40x7D
Studebaker S-1	½	595	Own	L	6	3⅜x4⅛	221.0	27.3	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	3	Own	Sp	16.4	B4IM	148	114	2330	19x5.25	19x5.25
Studebaker S-20	1½	695	Own	L	6	3¼x4⅛	205.0	25.4	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	4	Tim	Sp	36.2	B4IM	224	130	2985	20x6.00	32x6
Studebaker S-30	1½	775	Own	L	6	3¼x4⅛	205.0	25.4	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	4	Tim	Sp	36.2	B4IM	224	160	3140	20x6.00	32x6
Studebaker S-40	2	945	Own	L	6	3¼x4⅛	205.0	25.4	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	4	Tim	Sp	37.4	B4IM	276	136	3775	20x6.50	20x6.50D
Studebaker S-50	2	895	Own	L	6	3¼x4⅛	205.0	25.4	70@3200	C	McC	Long	Cle	Ross	Str	P	DR	W-G	4	Tim	Sp	37.4	B4IM	276	148	3810	20x6.50	20x6.50D
Studebaker S-60	2	945	Own	L	6	3¼x4⅛	205.0	25.4	70@3200	C	McC	Long	Cle	Ross	Str	P	DR	W-G	4	Tim	Sp	37.4	B4IM	276	146	3265	20x6.50	20x6.50D
Studebaker GN-N	——	2495	Own	L	6	3⅜x4⅛	221.0	27.3	70@3200	C	—	Long	—	Ross	Str	P	DR	Cla	4	Cla	Sp	33.5	B4IM	348	160	3850	30x5	32x6
Studebaker 88	——	3295	Own	L	8	3½x4⅜	337.0	39.2	115@3200	G	Long	Long	Spic	Ross	Str	P	DR	Ful	4	Eat	Sp	24.6	B4IMV	444	184	5200	20x7.50	20x7.50D
Studebaker 99	——	3795	Own	L	8	3½x4⅜	337.0	39.2	115@3200	G	Long	Long	Spic	Ross	Str	P	DR	Ful	4	Eat	Sp	24.6	B4IMV	505	184	5680	20x7.50	20x7.50D
White 15B	*7,500	1545	Own	L	4	3¾x5⅛	226.4	22.5	31@1600	G	Own	Own	Spic	Own	Zen	Vac	L-N	Own	4	Own	Sp	18.6	O2XM	226	133½	3402	30x5	30x5
White 160	*8,000	1700	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4025	30x5	30x5
White 60	*8,000	1850	Own	L	6	3½x4½	260.0	29.4	54@2100	C	Own	Own	Mec	Han	Zen	Vac	DR	Own	3	Own	Sp	17.8	L4IH	276	138	3739	30x5	30x5D
White 161	*9,000	1850	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4290	34x7	34x7
White 162	*10,000	1900	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	136	4260	30x5	30x5D
White 210	*10,000	2300	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	4875	30x5	30x5D
White 61	*10,500	2450	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	4789	30x5	30x5D
White 611	*11,500	2550	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	—	Own	—	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	4980	20x7.00B	20x7.00DB
White 211	*11,500	2425	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5110	32x6	32x6D
White 212	*13,000	2700	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5230	34x7	34x7D
White 56	*13,000	3125	Own	L	4	4 x5¾	289.0	25.6	45@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	26.2	O2IM	268	165	5276	36x4	36x7
White 612	*13,000	2800	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	—	Own	—	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5100	20x7.50B	20x7.50DB
White 620	*15,000	4350	Own	H	6	4 x5¼	396.0	38.4	72@1800	G	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.8	OL4IHV	—	157	7300	20x8.25B	20x8.25DB
White 51A	*17,000	3750	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	35.6	O2IM	335	170	6438	36x5	36x8
White 51AT	*17,000	3875	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	46.6	O2IM	335	134	6227	36x5	36x8
White 621	*18,000	4650	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	OL4IHV	—	157	7700	20x9.00B	20x9.00DB
White 640	*20,000	6100	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	Sp	33.9	O4IA	—	180	9200	20x9.00B	20x9.00DB
White 630	*20,000	5000	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	—	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	O4IHV	554	168	8500	20x9.00B	20x9.00DB
White 55	*21,500	4650	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	66.1	OPXM	224	174	8737	36x5	40x5D
White 58	*22,000	4400	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	49.7	OPXM	224	180	7797	36x5	36x5D
White 641	*24,000	6450	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	46.9	O4IA	—	180	9700	20x9.75B	20x9.75DB
*White 630 SW200	*24,000	6280	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	—	Own	Spic	Ross	Zen	P	DR	Own	4	TIM	WO	44.2	OTIHV	—	193	10000	20x8.25B	20x8.25DB
White 631	*24,000	5750	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	2R	56.9	O4IHV	— —	168	9000	20x9.25B	20x9.25DB
White 52	*28,000	5100	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	58.4	OPXM	224	174	9409	36x6	40x12
White 52T	*28,000	4700	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	76.5	OPXM	224	129½	8461	36x5	40x5D
White 643	*32,000	6950	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	—	180	10900	24x10.50B	24x10.50DB
*White 642 SW310	*34,000	8045	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	—	Own	Spic	Ross	Zen	P	L-N	Own	4	TIM	WO	55.6	OTIHV	— —	198	12670	20x9.00B	20x9.00DB
White 642	*34,000	6750	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	—	180	10600	24x9.75B	24x9.75DB
*White 643 SW410	*40,000	8570	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	—	Own	Spic	Ross	Zen	P	L-N	Own	4	TIM	WO	69.9	OTIHV	— —	193	14400	40x8	40x8D
**White 60K	——	2200	Own	L	6	3½x4½	260.0	29.4	54@2100	C	—	Own	MEC	Han	Zen	Vac	DR	Own	3	Own	Sp	17.6	L4IH	276	112	5200	20x7.00B	20x7.00B
White 601	——	1900	Own	L	6	3½x4½	260.0	29.4	54@2100	C	—	Own	MEC	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	3825	20x7.00B	20x7.00B
White 602	——	2050	Own	L	6	3½x4½	260.0	29.4	50@1800	C	—	Own	MEC	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4125	20x7.50B	20x7.50B
Willys 6-C-113	½	395	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	Own	3	Own	Sp	12.4	B4IM	147	113	1872	19x5.00	19x5.00
Willys 6-C-131	1½	595	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	232	131	2625	20x5.50	32x6
Willys 6 C-157	1½	630	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	232	157	2900	20x5.50	32x6

GENERAL NOTATIONS

*†**REFERENCE MARKS** apply to individual lines only and explanations are given under the subdivision for each company in the "**SPECIAL NOTATIONS.**"

CAPACITIES given in this table are in tons or fractions of tons. *Shows maximum allowable gross weight in pounds.

WHEEL BASES given are standard, but optional wheel bases are available in many cases.

ENGINE—Bud, Buda; Con, Continental; Her, Hercules; Lyc, Lycoming; Pont, Pontiac; Wak, Waukesha; Wis, Wisconsin; Hall, American Car & Foundry.

VALVE ARRANGEMENT—L, "L" head; H, in head; O, overhead; T, T head.

TYPE OF CAMSHAFT DRIVE—G, gear; C, chain.

RADIATOR MAKE—G & O, G & O Mfg. Co.; Per, Perfex Corp.; Long, Long Mfg. Co.; Har, Harrison Radiator Corp.; Fed, Fedders Mfg. Co.; McC, McCord Radiator & Mfg. Co.; Mod, Modine Mfg. Co.; Hex, Hexcel Radiator Co.

CLUTCH MAKE—Jon, Jones Clutch & Gear Co.; Ful, Fuller & Sons Mfg. Co.; Borg, Borg & Beck Co.; Br-L, Brown Lipe Gear Co.; Rock, Rockford Drill & Machine Co.; Cov, Covert Gear Co.; Long, Long Mfg. Co.; Detr, Detroit Gear & Machine Co.; Mer, Merchant & Evans; Hel, Merchants & Evans.

UNIVERSALS MAKE—Spic, Spicer Mfg. Co.; Blo, Blood Bros. Machine Co.; Sup, Superior Universal Products; Un, Universal Products Co.; Cle, Cleveland Steel Products Corp.; Pet, Peters; Opt, optional; Mec, Mechanics Machine Co.

STEERING GEAR MAKE—Ross, Ross Gear & Tool Co.; Han, Hannum Mfg. Co.; Sag, Saginaw Steering Gear Co.; Gem, Gemmer Mfg. Co.; Col, Columbus Gear & Pump Co.; W-G, Warner Gear Corp.

CARBURETOR—Car, Carter; Mar, Marvel; Sch, Wheeler-Schebler; Str, Stromberg; DL, Detroit Lubricator; Til, Tillotson; Zen, Zenith-Detroit.

FUEL FEED—Gra, gravity; Vac, vacuum tank; P, fuel pump.

ELECTRICAL SYSTEM—AB, American-Bosch; Aut, Electric Auto-Lite; Eis, Eisemann; L-N, Leece-Neville; NE, North East; RB, Robert Bosch; DR, Delco-Remy.

TRANSMISSION—Br-L, Brown-Lipe; Cov, Covert; Ful, Fuller; Mec, Mechanics Machine; Mun, Muncie; W-G, Warner Gear; Cot, Cotta Gear Co.; Cla, Clark Equipment Co.

REAR AXLE—Cla, Clark Equipment; Col, Columbia; Eat, Eaton; Pont, Pontiac; Sal, Salisbury; Tim, Timken; Wis, Wisconsin.

FINAL DRIVE—IG, internal gear; St, straight bevel; Sp, spiral bevel; Wo, worm; 2R, double reduction; Ch, chain; S-T, semi-transverse.

TIRES—B, balloon; D, dual; S, solid; P, pneumatic.

TYPE OF SERVICE BRAKES—B4IM, Bendix, 4 wheel internal mechanical; B6IA, Bendix, 6 wheel, internal air; B4IMV, Bendix, 4 wheel, internal mechanical, vacuum; BrIA, Bendix operating on 4 rear wheels, internal, air; BW4IM, Bendix front, Wisconsin rear, 4 wheel internal, mechanical; BE4IM, Bendix front, Eaton rear, 4 wheel, internal mechanical; BO4IM, Bendix front, own rear, 4 wheel internal mechanical; B4IH, Bendix, 4 wheel, internal, hydraulic; B4, Bendix, 4 wheel.

C4IM, Columbia, 4 wheel, internal, mechanical; K2IM, Clark, 2 wheel, internal, mechanical.

L4IHVA, Lockheed, 4 wheel, internal, hydraulic, vacuum, air; LO4ID, Lockheed, own, 4 wheel, internal, drive shaft; LT4DV, Lockheed Timken, 4 wheel, drive shaft, vacuum; L4IH, Lockheed, 4 wheel, internal, hydraulic; L4IHV, Lockheed, 4 wheel, internal, hydraulic, vacuum; LT4IVA, Lockheed, Timken, 4 wheel, internal, vacuum, air; L6IHV, Lockheed, 6 wheel, internal, hydraulic, vacuum; L6IH, Lockheed, 6 wheel, internal, hydraulic.

O2IM, Own, 2 wheel, internal, mechanical; O2IV, Own, 2 wheel, internal, vacuum; O4IA, Own, 4 wheel, internal, air; O4IM, Own, 4 wheel, internal, mechanical; O4IV, Own 4 wheel, internal, vacuum; O4M, Own, 4 wheel, mechanical; O2XM, Own, 2 wheel, external, mechanical; O4XM, Own, 4 wheel, external, mechanical; OJXM, Own, jack shaft, external, mechanical; OL4IH, Own, Lockheed, 4 wheel, internal, hydraulic; OPX, Own, propeller shaft, external; OPXM, Own, propeller shaft, external, mechanical; OPM, Own, propeller shaft, mechanical; ORIV, Own, rear wheels, internal, vacuum.

S4IM, Steeldraulic, 4 wheel, internal, mechanical.

T4rIA, Timken, operating on 4 rear wheels, internal, air; T4IA, Timken, 4 wheel, internal, air; T6IA, Timken, 6 wheel, internal, air; T2IMV, Timken, 2 wheel internal, mechanical, vacuum.

W4I, Westinghouse, 4 wheel, internal; W4IA, Westinghouse, 4 wheel, internal, air. 4IA, Four wheel, internal, air; 4IH, Four wheel, internal, hydraulic.

SPECIAL NOTATIONS

AMERICAN-LA FRANCE

*Chief model also available as 2½-ton model, 34x7 tire, dual rear, weight 6,400. Price $3,900.

Chieftain model also available as Dump Truck, 160-inch wheel base.

Balloon tires optional on Chief, Chieftain and Big Chief models.

AUTOCAR

*Engines in these models are located under the driver's seat.

BROCKWAY

*Six wheelers.

CHEVROLET

Utility model available on 131-inch wheel base with chassis weight of 2,760 pounds and equipped with dual rear wheels.

DAY ELDER

*Six wheeler

Additional standard wheel bases are available on different models as follows:—

85.....	156, 168	240.....	204
110.....	168, 186	285.....	204
130.....	165 180, 204	345.....	204
160.....	165, 180, 204	402.....	204

DODGE

*Models F40, F41, F61 and F62 can be had with double drop frame.

DIAMOND T

*Six wheelers.

Additional standard wheel bases available as follows:—

551.....	158	750.....	167, 192
504.....	166½	801.....	180½, 199¼
506.....	174	1200.....	174½, 180
603.....	157, 179	1600.....	174½, 180
606.....	177½	1601.....	184

F. W. D.

*Indicates six-wheel model.

The BTL and BT models are special line construction trucks in which complete provision for mounting AT and T earth boring machine, winch, body and other line construction accessories is included in the standard chassis.

Special power take-off transmission, which provides 3 power take-offs which may be operated in any transmission speed, optional on all models.

FEDERAL

*Six wheelers.

GRAMM

Series	Straight Rating	Wheel Base	Pay Load Range
AX 4	8,000	157	1 to 1½ tons
AX 6	8,000	157	1 to 1½ tons
BX 4	10,000	157	1½ to 2 tons
BX 6	10,000	157	1½ to 2 tons
CX 4	12,000	157-180	2 to 3 tons
CX 6	12,000	157-180	2 to 3 tons
B	12,000	157-174	1¾ to 2½ tons
C	14,000	145-196	2 to 3 tons
D	17,000	145-196	2½ to 4 tons
E	20,000	145-196	3 to 4½ tons
EY			3 to 4 tons
Gy			4 to 5 tons
GW	28,000	157-240	5 to 7½ tons
HY			5 to 6½ tons

†Both the four and six cylinder are also offered in 157-inch wheel base at $1,145 and $1,345, respectively.

GENERAL MOTORS TRUCK

*Capacity indicated is the Straight Rating (combined weight of chassis, body, equipment and payload) for which each chassis is designed and guaranteed to satisfactorily operate under average conditions. The size of the tires used does not affect this Straight Rating, but to secure maximum tire mileage it is suggested that the total gross weight be limited to a "recommended gross weight" for each tire equipment based on tire capacity. Prices cover base chassis and vary with wheel base and tire combinations. The number of wheel base lengths, tire types, range of "recommended gross weights" and resulting payload range (assuming nominal body allowance) for each model follows:—

Note: Models T-15 to T-60, inclusive, are available for export only as coach chassis.

Model	Wheel Bases	Tire Types	Range of *Rec. Gross Weights	Payload Range
T-11	1	1	3800	½
T-15	3	10	4500- 6500	½-1½
T-17	2	8	5500- 6500	1-1½
T-19	3	22	6500- 8500	1½-2
T-25	3	17	6800- 9000	1½-2
T-26	4	..	8500-11000	2-3
T-30	3	15	10000-12500	2-3
T-31	4	..	11000-14000	2½-4
T-42	4	12	12000-15000	2½-4
T-44	4	12	12000-16000	3-4½
T-51	4	..	16500-19000	4-5½
T-55	4	..	16500-19000	4-5½
T-60	4	18	18500-22000	5-6½
T-61	4	..	19500-22000	5-6½
T-82	4	12	19000-24000	5-7
T-85	3	..	22000-26000	5-7
T-90	3	7	22000-28000	5-7½
T-95	3	..	28000-34000	7-9
T-96	3	..	28000-34000	7-9

†Models T-90, T-95 and T-96 are six wheelers, the latter having one driven and one trailing axle. Optional rear axle gear ratios available for all models.

Double reduction axles available for Models T-60, T-61 and T-82.

INDIANA

*Six wheelers.

MACK

Other wheel bases furnished on all truck models.

On 6-wheel jobs, 4 rear wheels driven by chains, foot brake on 4 rear wheels.

††Made also in tractor models.

PAIGE

*Price includes panel or screen body.

PIERCE-ARROW

*Optional final drive on Models PW, PX, PY and PZ.

REO

Model 15 Junior can be had with 4-speed transmission at additional cost. Models 15 Junior, DF 129, DF, FA, FE and FF are available with dual wheels at additional cost.

SELDEN

Additional standard wheel bases are available on different models as follows:—

Model 37C.....	162 and 181
39C.....	177 and 190½
47CB, 47CD...	151, 164 and 184
67C.....	151, 164, 184 and 198

STEWART

Models 30 and 30X can also be supplied in 110, 120 and 140-inch wheel base.

Models 40 and 40X can also be supplied in 110, 140 and 160-inch wheel base.

*Model 34X can be supplied in 135, 145, 160 and 176-inch wheel base.

Model 28X can be supplied in 130, 145, 160 and 176-inch wheel base.

Model 29XS can be supplied in 135, 160 and 176-inch wheel base.

*Models 18X, 32X and 36X can be supplied in 148, 190 and 220-inch wheel base.

*Models 19X, 31X and 27X can be supplied in 148, 172, 190, 220 and 235-inch wheel base.

As optional equipment models 18X, 19X, 36X, 31X and 27X can be supplied with Timken dual reduction rear axle.

Models 38-8 and 38-6 can be supplied in 196, 226 and 241-inch wheel base and worm axle.

STUDEBAKER

*Capacity model GN-N is 4,000 pounds for body, cab, driver and payload.

Maximum gross load, chassis, body and payload for Models 77 and 88 is 12,500 lbs. and for Model 99 is 14,000 lbs.

†Hand brake same as foot brake, standard. Hand brake on drive shaft, special equipment.

WHITE

*Six wheelers.

**Price on Model 60K includes body.

Material Handling in Automotive Plants

(Continued from Page 6)

may, however, preclude the possibility of crane service and, as pointed out earlier, these periodic movements often vary widely as to area served or destination of material, which conditions are conducive to the employment of the mobile type of equipment.

A typical illustration of the use of electric trucks may be found in the handling of sheet steel, in which a machine is used for handling bundled sheet in packages up to 8,000 pounds in weight

April Midwest Truck Sales Benefit by Trade Revival

(Continued from Page 1)

most truck dealers in this territory agree.

Ford, Chevrolet, International and Dodge truck made a very good showing in April, while Willys commercial jobs made an actual gain in sales over the same month a year ago. Studebaker gained over any preceding month this year, but fell off somewhat in sales as compared with the month in 1930. Larger jobs, ranging from 2½ and 3 ton on up, were considerably below last year in sales, but a slight improvement over March was noted. A feature of last month's sales was the unusually large number of ton and ton and one-half jobs, equipped with dump bodies for contract work, sold, approximately half of all Ford trucks and a third of all International trucks moved in April, having been thus equipped.

The most encouraging trend in the truck business in Nebraska this spring is the large volume of road work opening up. It is safe to predict that commercial units adapted to this type of work will surpass last year's sales record for the same type of vehicle by a comfortable margin. Farm truck sales have not loosened up yet to any noticeable extent for two principal reasons—uncertainty as to market prices for this year's crop and an unsettled condition caused by measures pending in the Nebraska legislature. Sales of large commercial jobs, such as used by commercial truckers, are also hanging fire to a large extent because of uncertainty as to legislative action. This condition will be settled early this month for better or for worse, for the next two years at least.

G. M. C. sales during April were about the same as for the same month a year ago, according to H. S. Galloway, sales manager of the Lincoln Buick Company, G. M. C. dealer. Potentially inimical legislation has materially hindered the sale of the heavy G. M. C. models, Mr. Galloway asserts.

"April was by far the best month this year for truck sales," said H. E. VanBurg, sales manager of the Rogers Motor Company, Ford dealer. "The volume was about the same as for April last year, but the ratio of ordinary commercial jobs and dump-body jobs was somewhat changed about, with half of last month's sales being in the latter class, whereas last year other commercial jobs were in preponderance. The greater amount of road work scheduled for this year has been responsible for the increase in sales of trucks equipped to handle gravel. May, June and July bid fair to be good truck months, I believe, depending upon the prevailing prices for wheat."

"Trucks got a good break last month," declared Al Duteau, proprietor of the DuTeau Chevrolet Company. "Chevrolet commercial car sales were way ahead of any month in the last eight months and were very nearly up to sales in April a year ago. The most of our sales were made to operators of large delivery fleets and other urban users of trucks, however, with very few jobs going to farmers. This condition accounted for a let down in truck sales by our associate dealers in Lancaster county.

"Judging from the way truck sales picked up during the last half of April, May should see a normal number of vehicles sold, while June and July will probably hold close to last year's level. If the legislature limits the weight and length of trucks to be used on Nebraska highways, and farm prices are right, I rather look for our truck business to exceed last year's record."

Guy Johnson of Johnson & Strom, Dodge distributors, declared that "Dodge truck sales followed the new car trend, being seasonal and considerably improved over any preceding month this year. The sale of our larger trucks has been slower than usual, but the lighter jobs have moved very well. Sales of this type have started out in fine shape in May."

EAST LIVERPOOL, O., May 7.—After more than a year of inactivity, commercial truck sales in the upper Ohio Valley have started on the return to normal, reports of leading distributors in this district the past month have indicated. During the month of April, commercial truck sales showed a gain of almost 75 per cent., and during the thirty-day period more units were sold than any one month in more than a year.

Improvement in the ceramic industry generally in the East Liverpool area, coupled with the easing of money and improvement in business generally, is a contributing factors in the upturn in the truck industry, dealers said.

The greatest gain for the month in Columbiana county was made by Ford commercial units, sales for the thirty-day period totaling twenty. Dealers have been concentrating for several weeks on Ford commercial cars.

Don Trotter of the Trotter Chevrolet Sales Company reported continued interest in Chevrolet trucks, declaring that the new models are receiving much consideration among shippers and fleet owners. Sales the past month showed a gain over the preceding month, there being eight new Chevrolet trucks sold in the county during the thirty-day period.

Studebaker commercial units also gained in sales as well as Dodge, Graham and White, distributors of these makes reported.

CANTON, O., May 7.—Reflecting the upturn in major industry, particularly steel and clay products, in the Greater Canton area, commercial car sales during the month of April reached the highest level in more than a year. While volume of sales was confined to the lighter and lower priced makes, there was a substantial gain in all models of trucks, in some instances the increase being better than 100 per cent., as compared to the same month a year ago.

While dealers have been exerting their efforts for some weeks, not until the past month was there any great evidence of increased sales. During the past month, however, many of the construction firms, bus companies and fleet owners were forced to make replacements because of the heavy demand on their obsolete trucking equipment. All distributors of trucks shared in this general buying during the past thirty days, and at no time in the past several months has the truck distributor felt more optimistic of the future than at the present time.

Apathy in commercial truck buying was due largely to the inability of the firm and individual to finance new equipment until the past month. Business in most lines had been at a standstill until a few weeks ago, when large road lettings, establishment of new motor freight lines in this section and improvement of retail business in general, resulted in truckers replacing old units and augmenting their fleets, dealers said.

Popularity of the new Ford commercial units continues unabated, dealers for many weeks having concentrated on truck sales as well as passenger cars. During the month of April thirty-nine new Ford commercial trucks were sold in this section, the majority of them being of the semi-trailer type.

Chevrolet truck sales were up in April, seventeen of this make having been sold in Stark county.

Outstanding perhaps in the improved status of commercial truck sales the past month was the fact that distributors of heavier and more expensive type shared in the buying. Heavy trucks for almost every duty found buyers during April, some of the distributors reporting the biggest sales in more than a year during the 30 day period.

Tom Martinet, of the White Truck Sales Company, was successful in selling three new type White buses to the Canton Motor Coach Company, which was compelled to add to its equipment with the discontinuing of several local street car lines. It was the first real business for this firm in months, Martinet said.

Other distributors who reported sales included Stewart, G. M. C., Dodge, Reo, Willys-Knight, Studebaker, and Durant. The Stewart gain was among the highest six of these cars going to users in the Canton area.

G. M. DECLARES REGULAR DIVIDENDS; ELECTS STETTINIUS

New York, May 7.—The directors of General Motors Corporation at their meeting held yesterday declared on the outstanding common stock the regular quarterly dividend of 75 cents a share, payable June 12 to stockholders of record May 16.

In addition, the regular quarterly dividend of $1.25 a share was declared on the $5 preferred stock, payable August 1 to stockholders of record July 6.

This being an organization meeting, the present officers were re-elected for another year. To better promote and co-ordinate the industrial relations activities of the corporation, Edward R. Stettinius, who has been in charge of the same for several years past, was elected a vice-president.

Mr. Stettinius is a son of the late Edward R. Stettinius, former assistant secretary of war and member of the firm of J. P. Morgan & Co.

Mr. Stettinius entered General Motors Corporation in 1924 in the Hyatt Roller Bearing Division, Newark, N. J. In June, 1926, he was appointed assistant to John L. Pratt, vice-president and director of the corporation. In November, 1930, he was appointed assistant to Alfred P. Sloan, Jr., president.

HARDWOOD TRADE REMAINS DULL DUE TO LOWERED PRICES

Memphis, Tenn., May 7.—The hardwood lumber trade here continues rather quiet, the price tone being still somewhat weak though demand has increased.

Automobile stock in various woods is in some request and automobile parts concerns here and elsewhere in the state are running more full. Saw mills show a production of around 38 per cent., orders 10 per cent. ahead.

This is due to low prices and dull export trade. Conditions in the country with little rain are ideal. Logging opportunities have been excellent but in the lumber trade not fully utilized.

Unemployment in the lumber districts has been greatly reduced, however, by farming activities and other factors. Oak in first and seconds, ash, sypress, hickory, gum, poplar are moving but at rather low prices and the same has been true of quartered oak which shows some fluctuations, but not much additional strength to the market. Freight rates on logs and lumber are the subject of local effort and general effort for relief. Confidence obtains with more active conditions by the summer period.

RUSCO ANNOUNCES THREE APPOINTMENTS

Middletown, Conn., May 7.—The Russell Manufacturing Company here, manufacturer of Rusco brake linings, announces the following appointments of jobbers handling the complete line:—

J. W. Butts, 198 Church St., Poughkeepsie, N. Y.; Genuine Auto Parts, 410 Washington St., Utica, N. Y.; L. E. Pin, 22-26 Railroad St., Holyoke, Mass.

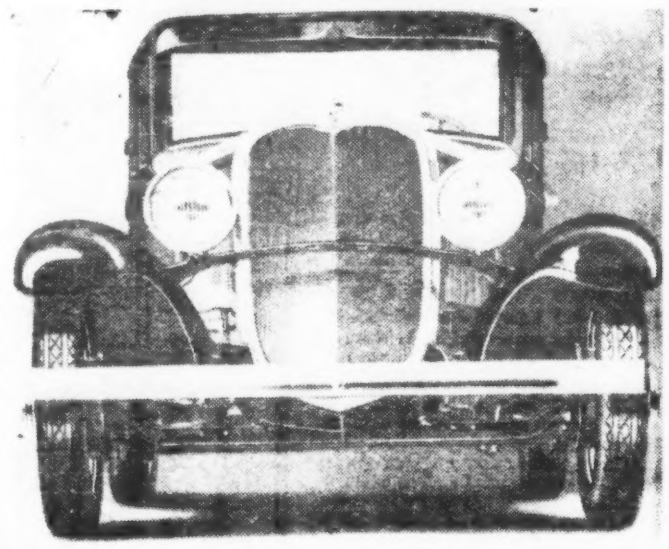
CENTURY LINES CARRY 5,013 PASSENGERS FIRST MONTH

Chicago, Ill., May 7.—That the public will fly if schedules are frequent and convenient and comparative with railroad rates, is evidenced by the fact that Century Air Lines carried 5,013 passengers in the first thirty days of operation, L. B. Manning, vice-president and general manager of the company, said. This is believed to be a record for any American air line for a similar flying period.

SULLIVAN-MORGAN CO. TAKES AUBURN LINE

Chicago, May 7.—The Sullivan-Morgan Company, for ten years dealer on the west side, has taken on the Auburn and Cord line, which it will handle from its headquarters at 4701 West Washington St.

Durant Offers New Line On 109 Inch W.B. at $695



Front View New Durant 619 4-Door Sedan Showing New Radiator Design

(Continued from Page 1)

is 5.46 and the maximum torque 144 ft. lb. at 1,300 r.p.m.; the engine is mounted on rubber. Force feed lubrication is furnished to the main bearings, connecting rod and camshaft bearings by gear type pump. The cooling system has a capacity of 14 qts. and the water is circulated by means of a centrifugal pump. A 12-gallon gasoline tank is supplied. Fuel is furnished to the 1¼-inch carbureter by a fuel pump.

Single-plate dry disk clutch and a three-speed transmission are used.

The rear axle is of the semi-floating type, with a spiral ring gear and pinion which has a 3.9 to 1 ratio; tapered roller bearings are used throughout.

Standard I-beam section front-axle of the reverse Elliott type is used. Tapered roller wheel bearings and ball thrust bearings on the steering knuckle king-pins are standard.

Midland steeldraulic four-wheel brakes are provided; the brake drums are 11 in. diameter by 1½ in. wide.

Semi-elliptic springs are used front and rear; the front springs are 36 in. long and 1¾ in. wide. The rear springs are 54 in. long and 1¾ in. wide.

An adjustable semi-irreversible worm and sector type steering gear, mounted on roller thrust bearings, is used. The steering wheel is 17 in. in diameter.

The chassis is lubricated through Zerk fittings.

Four wood wheels with a spare rim are standard with an option of five wire wheels at extra cost. The tires used are 19x4.75 balloons.

Standard equipment includes the following: Temperature indicator, gasoline gauge, speedometer, ammeter, oil gauge, pull controls for spark, throttle and choke, coincidental ignition and coil lock, foot-operated headlight control, rear-view mirror, automatic windshield wiper, front and rear bumpers, hydraulic two-way shock absorbers, air cleaner, oil filter. All bright finished exterior hardware is chromium plated.

The shipping weight with wood wheels is 2,658 pounds; with five wire wheels 2,702 pounds.

NEWARK AUTOMOTIVE PLANTS EXHIBIT AT ENGINEERING COLLEGE

New Brunswick, N. J., May 7.—Automotive concerns from Newark and vicinity played a large part in the first annual engineering exposition of the College of Engineering at Rutgers University. Of ninety-four companies which sent exhibits twenty-four were located in and near Newark.

More than 3,000 people witnessed the display of products of construction and equipment of mechanical, civil, electrical, industrial, sanitary, airplane and radio engineering.

A feature of the show was a device to "hear" light and "see" sound through the media of a microphone and oscillograph. The apparatus transformed light waves into sound waves and the reverse.

A model plant was exhibited by the Public Service Gas and Electric Company, and a layout of the present and future highway development by the New Jersey State Highway Department. The Lehigh Valley and the New Haven railroads showed models of signal systems.

The companies from Newark and environs which participated were: Western Electric Company, Weston Electric Instrument Corporation, American Transformer Company, Hardwick & Hindle, Thomas A. Edison, Inc., the Daven Company, Hyatt Roller Bearing Company, Cranse Company, Aerofin Company, Atlas Valve Company, Carner Engineering Company, Foster Engineering Company, H & E Machine and Engineering Company, Lecourtenay Company, Quimby Pump Company, Titeflex Metal Hose H. A. Wilson & Co., Zeh & Hahnemann, Sandvik Conveyor Manufacturing and Hossendale Buboil.

HUDSON, ESSEX APRIL SALES 40% AHEAD OF MARCH

Detroit, May 7.—April sales of Hudson and Essex cars exceed March sales by more than 40 per cent., continuing the monthly increase, which has been consistent since the present models were introduced last November.

April was the best month Hudson and Essex have enjoyed since last June, William J. McAneeny, president and general manager, reported today.

January sales showed an increase over December sales of 28 per cent., February showed a 15 per cent. improvement and March bettered the February figures by 38 per cent.

Hudson was one of the companies showing a profit on its first quarter's operations.

NORWALK TIRE & RUBBER REPORTS $33,000 NET

Norwalk, Conn., May 7.—Net profit of more than $33,000 is shown in the statement of the Norwalk Tire & Rubber Company for the six months ended March 31, recently issued by H. C. Miller, secretary. This contrasts with a loss for the same period last year of $49,000 and a loss of $69,000 in 1929. Gross profit on the company's sales during this period reached almost $100,000, the statement reveals. Although the sales profit in 1929 was over $160,000, expenses were proportionately much higher. After deductions for depreciation and miscellaneous items, the sum of $2,759 has been transferred to the surplus account.

This Dealer Finds Ringing Doorbell Makes Most Sales

Townsend Motor Co. of Philadelphia, Franklin Distributor, Says This Canvassing Is Not Done Blindly.

WHAT sort of effort do live dealers regard as the most effective in promoting car sales today? Are they nearly all of one mind as to the general type of method apt to be the most successful, or is there a wide diversity of opinion? Is the salesman's turn on the floor as productive as it once was, or is it only a very minor factor now in obtaining results?

"Having the salesmen ring doorbells, to put it briefly, is our most effective method today in increasing car sales," said J. Miller Kalbach, assistant to President W. S. Townsend, of the Townsend Motor Company, Franklin distributor, 3427 North Broad St. "This canvassing is not done blindly, in the sense that the salesman rings one doorbell after another. We have a new car sales force of twelve men and each man is given a certain quota of canvassing calls to make for the week and month, the list of names of persons upon whom he is to call being supplied him by William E. Michel, the retail sales manager. Each salesman also must make a certain quota of demonstrations. This canvassing is tied up with a direct-mail campaign, which helps it become particularly effective. We have, in fact, done better in the last three months, with the general business depression continuing, than we did before it began."

The company makes use of the daily automobile registration list, selecting therefrom the names of car owners in the Franklin price class and embodying these in its regular mailing list. The company has three branches for which it supplies mailing campaign material—one in Drexel Park, another in Jenkintown and the third in Lancaster. Last March a series of four post cards are mailed to all owners of homes in Drexel Park valued at $8,000 and upward, in connection with the campaign in that locality, the canvassing being done between the arrival dates of the cards. Vocational drives also are made. For example, 5,000 doctors have been circularized with a series of four post cards in the Philadelphia area, the canvassing starting after the mailing of the first card and continuing between the issues of the other three cards in the series.

In large, colorful folders, provided by the factory and emphasizing the air-cooled engine feature of the Franklin, it is customary to link up the advertising message with some outstanding personality in the news of the day, and aviators make good subjects because of wide popular attention and the fact that air-cooled engines are used in flights. Such folders, for example, were issued when Capt. Frank Hawks, the aerial speedster, recently was being featured in the newspapers, and again when Amelia Earhart, who purchased a Franklin car, was prominently in the public eye. During both the Hawks and the Earhart direct-mail-and-demonstration periods in Philadelphia ,much inetrest was aroused among members of the selling force, as well as among the public, with the result that in the Hawks drive one sale resulted from every four demonstrations, or 25 per cent.; while in the Earhart drive the percentage of sales was from 18 to 20 per cent. The salesmen made ten calls a day.

The company now is concentrating on a style campaign of demonstrating and selling to women, which started on April 10, to run for one month. When calling, the salesman tells the prospect he called to give her a ride in the 1931 air-cooled Franklin.

Once a week each salesman spends half a day on the floor of the service department, closely watching the various contacts of the service salesmen with customers. When opportunity offers, the new car salesmen stationed here inquire of the customer how well he is satisfied with his Franklin car and the service, and finally asks to be furnished with the names of any of the customer's friends who may be in the market for a car.

All Franklin car owners are considered in the light of prospects for a new car if they do not already possess the latest model, and, in any event, as sources of names of prospects. If a Franklin owner says he has not ridden in one of the new models he is invited to do so. The Townsend Motor Company has many repeat orders on Franklin cars, and an effort is made to keep up the standard on used cars, all good used Franklins taken in exchange being thoroughly reconditioned for resale.

According to Mr. Kalbach, the picture in the automobile selling field has so changed that it has been necessary to get back to the "drummer" type of salesman, who will earnestly go forth and dig up real prospects. Direction of their efforts, however, is deemed highly important, and this house holds, not weekly, but daily sales meetings, with talks on proper demonstration and other topics, educational trade discussions and the like, with periodic examinations on what has been discussed in these sessions.

Small Ads That Sell Cars

Noyes Buick
BUSINESS BAROMETER
1931
160%
175%
150%
125%
100%
75%
50%
25%
0
This chart registers Noyes Buick Retail Managers' report of sales for the calendar year 1931, a total of eight-five days (main store — 857 Commonwealth Avenue only), as compared with the corresponding totals of 1930.
Business Is Great With Us!
The public knows that the rare combination of quality—style—low prices—favorable terms—and good service prevails here.
Tomorrow 36 cars go on sale. The majority renewed, refinished and just out of our six-acre factory-supervised shops.
Priced From $135 to $1350
OPEN EVENINGS
—Except Saturday
859 COMMONWEALTH AVENUE STADIUM 3600
Noyes Buick
BIGGEST BUSINESS IN 27 YEARS
In contrast to the small volume of trade in some industrial lines, our Used Car Department is not only prosperous . . . but last week had the biggest business in its history.
Today's "No Trade" Special
1930 Studebaker Sedan $765
Typical Examples
Open Evenings—Except Saturday
Noyes Buick
SAVE BY OWNING A QUALITY CAR
Your choice of 137 cars, low-mileage—popular makes. The majority recent models divided into four groups—
41 cars under $250
31 cars $250 to $595
24 " 600 " 795
40 " 800 " 1,295
Averaging 40% off the first cost, with 25% of the built in mileage remaining.
Buicks finished like new—comfortable—serviceable—good looking—any body type.
Purchasers who wish to pay as they ride will find that our Finance Department makes it easy to own the car of their choice.
Down payments are correspondingly small, or unnecessary if your exchange car is of average value. Monthly payments are unusually low, $20 to $48.50 includes all charges.
Buy your next car right. A new 16-page booklet titled, "How to Get More Value For Your Money," tells the story . . . it's illustrated, and free for the asking.
Open Evenings Except Saturday
859 COMMONWEALTH AVENUE STADIUM 3600
Noyes Buick
IMMEDIATE ACTION MEANS A SAVING
Orders for new 1931 Buick "8" Models are substantially ahead of those booked a year ago.
The large number of resultant exchanged cars make it necessary for us to scale Used Car prices downward.
BUICKS
Coupes Coaches
Broughams Roadsters
Touring
1925 to 1931 Models
$100 to $1300
PARTIAL LIST
COMMONWEALTH AVENUE STADIUM 3600

Comparatively small advertisements are favored by the Noyes Buick Company of Boston, Mass., which uses them to advertise exclusively its used car offerings from day to day. Even though surrounded by larger advertisements and masses of used car advertising, especially in the Sunday newspapers, these ads stand out by reason of their clever typographical layout. They are changed several times weekly, the offerings of cars changing with them as new stock comes in and the former offerings are cleared out. In one week twelve thousand persons visited the showrooms for new and used cars, when an unusual display of transportation models of various kinds, from locomotives to dirigibles, was shown.

A feature of the used car offerings has been a daily "no trade special," is which a good used car of specified make and year was offered at a price without any trade-in of another car. This idea has brought many customers who had no cars to trade, but wanted a good used car at a fair price. Another feature of the advertising, which packs much information in a small space, is that customers are told of the range of monthly payments in cash and informed that these payments include all charges, the deal being carried by the firm's own finance department. The ads vary in measurement from 105 agate lines to as small as thirty agate lines and invariably single column width.

That they are "bringing home the bacon" is proven by some figures the Noyes Buick Company has recently released. For eighty-five days in 1931, sales were 60 per cent. greater than for the corresponding period of 1930, for the main store at 859 Commonwealth Ave. only. March retail car deliveries from the main store increased 88 per cent. over March, 1930. The company's quota of new cars for the main store for 1931 is 5,000 units.

TRENTON A. T. A. WILL ENTERTAIN 18 MOTOR VEHICLE COMMISSIONERS

Trenton, N. J., May 7.—Motor vehicle commissioners of 18 states who will come to Trenton for a conference to be participated in by State Motor Vehicle Commissioner Hoffman, will be entertained by members of the Trenton Automobile Trade Association, May 31. This announcement was made at a luncheon meeting of the trade body at the Carteret Club. William A. Weinmann, president, presided.

John L. Brock, is the chairman of the special committee in charge of the arrangements. It is planned to have the guests at the Trenton Country Club for golf during the day. At night a stag dinner will be served at the same place. Elaborate preparations are being made for the entertainment of the guests.

While the men are giving evidence of their skill on the golf links the women who accompany the guests to this city will be taken on automobile trips. The itinerary includes not only several of the larger manufacturering establishments of Trenton, but historic points in and adjacent to the city.

Tops Own Used Car Sales Record by 6% In Month of April

THE De Brown Auto Sales Company, Omaha Studebaker distributor for Nebraska and western Iowa, obtained excellent results in used car sales during April, topping by 6 per cent. the used car sales record for any preceding month in the history of the company, from a well-planned newspaper advertising campaign. In addition to playing up Studebaker's certified used car pledge in the advertising, the De Brown Company gave a breezy semi-technical description of a number of used cars in each ad, an example of which follows:

1928 BUICK STANDARD COACH

This is that popular Buick model and it has retained all of its original beauty. It is equipped with practically new tires, bumper and bumperettes. The mohair upholstering, finish and motor are in perfect condition. We are pricing this car to sell immediately. See it Monday.

1929 NASH 6 "400" SPORT COUPE

Just the snappiest little coupe in Omaha. It is equipped with rumble seat, bumpers and bumperettes, seat covers, etc. The dark green finish and chromium fittings give it that "breath of spring" appearance. You've bought it—if you see it.

1929 CHRYSLER 70 SEDAN

This car is from a good family of automobiles and is living up to it. It is finished in blue, with black trimmings and chromium fittings, mohair upholstering, arm rests and comfortable cushions. The tires are almost new and the motor sounds like it had been driven only 100 miles instead of 17,000. It's priced to sell Monday. See it soon.

1930 STUDEBAKER PRESIDENT SEDAN

Last, but not the least, we mention this justly famous model that is winning and holding the respect of all motorists. It is finished in a dignified jet black, with white pin striping and chromium fitings contrasting beautifully. The former owner wanted the free wheeling model so bad that he gave up this wonderful car after just breaking it in. You can expect new car service from this car, and at a used car price. You'll be disapopinted if some one beats you to it—so hurry!

SALESMAN TRADES 40 USED CARS FOR 80 HORSES WITH INDIANS

One of the most original plans for selling used cars was hit on by J. C. Campbell, McLaughlin-Buick salesman at High River, Alberta, Canada. He decided to dispose of his stock to the Stony Indian tribe at Morley Reserve. Although the Indians had no money, they had plenty of serviceable and salable horses. He established business relations with the Indians and negotiated a deal whereby five used cars were exchanged for ten horses. The motoring fever spread amongst the Indians and inside of a month the salesman had disposed of forty cars. The eighty horses were auctioned at the annual sale at High River and brought high prices, so that when a final reckoning was made a substantial profit was realized on the transaction.

W. F. PLASTINE JOINS KASSELL CADILLAC, INC.

Jersey City, N. J., May 7.—Announcement was made this week of the appointment of William F. Plastine as one of the officers of the Kassell Cadillac, Inc., new distributor of Cadillac-La Salle motor cars in Hudson county. This concern will be located at 4140 Boulevard, Union City. Mr. Plastine was sales manager for the Jersey City Cadillac company for the past eleven years.

HUPP SIGNS TWO DISTRIBUTORS, 59 DEALERS IN APRIL

Detroit, May 7.—Hupmobile in April established a record for new dealer contracts. Fifty-nine new dealers signed the Hupmobile franchise in April, and two distributors, the Crescent Motors in Chattanooga, Tenn., and the Shidler Motor Company in Wichita, Kan. The new dealers are:

Walter M. High, Burlingame, Cal.; Sattui Queirolo & Vassar, Stockton, Cal.; S. & M. Motor Sales, Denver, Col.; H. C. Hurd, Monte Vista, Col.; Ost-Lincoln, Inc., Middletown, Conn.; Brown Auto Company, Danbury, Conn.; Central Garage and Filling Station, Hartford, Conn.; Carter-Budd Motor Company, West Palm Beach, Fla.; Lewiston Willys Motor Company, Lewiston, Idaho; Dicke Motor Sales, Downers Grove, Ill.; Hunt Auto Sales, Granite City, Ill.; Stahl & Smutz Motor Company, Moline, Ill.; J. E. Dorman, Goff, Kan.; Martin Motor Company, Carrolton, Ky.; Goodman-Willis Motor Company, Glasgow, Ky.; Leo J. Becnel, Franklin, La.; Dover Motor Sales, Inc., Boston, Mass.; Gordon & Day, South Braintree, Mass.; Walsh Motor Sales, Holyoke, Mass.; Frank S. Dewey, Marlboro, Mass.; Brown Tire and Garage, Inc., Worcester, Mass.; Erbaugh & Sullivan, Inc., Flint, Mich.; A. C. Stoltenburg, New Ulm, Minn.; Harry Bruggman, Staples, Minn.; Libby Motor Company, Libby, Mont.; A. T. Lanka, Broken Bow, Neb.; City Centre Garage, Pitman, N. J.; A. & P. Garage, Waldwick, N. J.; Lovett's Garage, Laconia, N. H.

Adam's Service Station, Angola, N. Y.; City Motors Corporation, Brooklyn, N. Y.; Central Garage, Cortland, N. Y.; A. & C. Garage, Highland Falls, N. Y.; Forsyth & Davis Motor Company, Inc., Kingston, N. Y.; C. H. Arthur Motor Sales Company, Lowville, N. Y.; Maynard Rome Corporation, Rome, N. Y.; A. H. Bickelhaupt & Son, Theresa, N. Y.; C. C. Fausner, Inc., Woodhaven, Long Island, N. Y.; Friendship Motor Company, Donora, Pa.; Hanover Motor Company, Hanover, Pa.; Dick's Garage, Marysville, Pa.; Dames Garage, Pottstown, Pa.; Laman Brothers, Sayre, Pa.; Spriggs Garage, Celina, O.; L. H. Geller, Fostoria, O.; Sharp Brothers, Mansfield, O.; Salem Automobile Company, Salem, Ore.; Corsicana Auto Company, Corsicana, Tex.; Culp Motor Company, Tyler, Tex; Franklin Motor Car Company, Waco, Tex.; John W. Pope, Vernal, Utah; Century Motor Company, Charlottesville, Va.; S. C. Thoresen Company, Janesville, Wis.; Hi-way Motors, Marshfield, Wis.

The new Canadian dealers are: Royal City Auto Sales, Guelph, Ont.; A. P. Mather, Hamilton, Ont.; William Dunn, New Market, Ont.; Parr Motor Sales, Sault Ste. Marie, Ont.; Napoleon Pouliot, Montmagny, Quebec.

OLDSMOBILE DISTRIBUTOR HAS FORMAL OPENING

Wichita, Kan., May 7.—The Miner Motor Company, distributor and retailer of Oldsmobiles in Wichita and the seven adjoining counties, was formally opened to the public last week. Among the officers who acted as hosts during the week of the formal opening were A. Miner and Andrew Granlund, partners in the business; T. O. Lund, sales manager, and Ray Lewis, service manager.

CITY OF CLIFTON, N. J., BUYS 3 WILLYS-KNIGHTS

Clinton, N. J., May 7.—Contracts have been awarded by the Clifton City Council for the purchase of three Willys-Knight automobiles for police patrol duty. They will cost the city $1,236. The Simpson Motor Sales underbid a competititor by only $17. William Simpson's bid was $1,836, with an allowance of $600 for the city's old cars.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS